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P6911

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Huntley.

During the week ending June 17, the maximum temperature was 91; minimum temperature, 41. Weather continues dry and warm.

The second irrigation of alfalfa was completed,,and all of the plats in fields L-I, II and III in the clover and pasture grass experiments were irrigated. So far, the season has been rather unfavorable for starting pasture grasses and clovers, because of the lack of moisture. In most cases the seed germinated fairly well, but many of the plants were dying for the want of moisture after they were up and irrigation was necessary much earlier than is ordinarily considered desirable on heavy land.

Thinning of sugar beets was completed. The stand of beets in the distance-of-thinning experiment in field B-V was unusually good, and it was possible to space the beets to rather accurate distances.

A trip was made by Mr. Hansen to Bozeman for the purpose of conferring with the Montana Experiment Station officials regarding cooperative work at this station.

Belle Fourche.

During the week ending June 17, the maximum temperature was 85; minimum temperature, 41; precipitation, .28 inch.

The pasture grasses that were seeded this spring were irrigated and the irrigation of all the alfalfa was completed. The corn, potatoes on the dry land rotations, fall irrigation experiment, variety corn and variety potatoes in field O were cultivated. All the summer fallow ground has been double disced, and rye plats in the dry land rotations plowed.

The sows and pigs on alfalfa pasture in field K were weighed on June 17.

Initial weight of sows (May 29).....	1354.0	pounds.
Average weight of 7 sows.....	193.0	"
Total weight on June 17 (19 days pasture)...	1485.5	"
Average weight of 7 sows.....	212.2	"
Average daily gain per sow.....	1 pound.	

The sows were fed a 1% ration, but from now on they will be cut to 1/2%.

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WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche (continued).

Initial weight of pigs, June 2.....1190 pounds.
Average weight per head..... 35 "
Total weight of pigs, June 17 (15 days pasture)..... 1482.5 "
Average weight per head..... 43.6 "
Average daily gain per pig..... .57 "

The pigs were fed a 3% ration of equal parts of corn, oats, and wheat. The oats and wheat were ground.

The individual pasture grasses did not make a sufficient growth to warrant any cutting in the ten-day period, so it was decided to let them grow another five-day period, at least. Plat C furnished pasture for 2 cows 10 days, and plat A, 2 cows for 6 days. It looks doubtful now if the three quarter-acre plats will carry the two cows. The plats will be kept in good moisture condition by frequent irrigations.

Results of the hog feeding experiments on rotations 65 and 69 are as follows:

Rotation No. 65.

Date	No. of days	No. of hogs	Weights		Gains			Lbs. corn fed	Net returns per acre
			Initial	Final	Total	% Daily	per day per hog		
5/13-5/23	10	4	409.0	403.3	-5.5		-13	82	$ -4.82
5/29-6/8	10	4	432.5	476.5	44.0	.97	1.10	88	8.80
6/9-6/17	9	4	476.5	516.0	39.5	.87	1.10	95	7.26
Totals	29	4			78.0				$ 11.24

Rotation No. 69

5/13-5/23	10	4	413.0	413.5	.5	.01	.01	83	$ -3.18
5/29-6/8	10	4	452.5	479.0	26.5	.60	.66	90	3.82
6/9-6/17	9	4	479.0	525.0	46.0	1.029	1.24	96	8.92
Totals	29	4			73.0				9.56

Net returns are calculated on the basis of corn at $1.00 per hundred and pork at 7 cents per pound.

Results to date from the 10 sheep on alfalfa at the south end of A-II, are as follows:

Date	No. of days	No. of sheep	Weights		Gains			Net returns per acre
			Initial	Final	Total	% Daily	per day per sheep	
5/29-6/8	10	10	1419.5	1466.5	47.0	.28	.47	$ 3.29
6/8-6/17	9	10	1466.5	1446.0	-20.5			-1.44
Totals	19				26.5			1.85

Net returns per acre is calculated on the basis of 7¢ per lb. for sheep.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Truckee-Carson.

During the week ending June 17, the harvesting of the alfalfa and sweet clover crops was begun. The harvesting of some fields of alfalfa over the Project was begun early in June, because of the damage done by frost, but general cutting is just commencing. The yield of the first crop will be below normal.

Plant lice have been abnormally abundant this spring on fruit and ornamental trees and shrubs, vegetables, and even on alfalfa. They are so numerous on some fields of alfalfa that the yield has been materially reduced by them. So many inquiries for methods of control have been received that a circular letter, entitled "Control of Plant Lice" has been issued.

Two cows, a Holstein and a Jersey, have been pastured on the sweet clover of E-6 and 7 since April 28. Eighteen pigs were also pastured in E-7 for 18 days, from April 24 to May 13. As the two cows were not keeping the sweet clover cropped sufficiently, another cow was put in June 16. The milk yields of the two cows since May 9 are given in the following table:

	Holstein	Jersey
May 4 to 13 4½ days.....	143.8	91.1
May 13 to 20 7 days.....	230.4	147.1
May 20 to 27 7 days.....	235.8	151.1
May 27 to June 3 7 days.....	230.3	149.5
June 3 to June 10 7 days.....	227.4	147.4
June 10 to 17 7 days.....	224.1	146.9
Total (39½ days).....	1291.8	833.1
Average per day.....	32.7	21.1

The pigs in both lots I and II have made excellent gains during the last two weeks, the daily gain for lot I being 1.20% and for

Truckee-Carson (continued).

lot II, 1.58%. The daily net return per acre of the former was $1.01, and of the latter, $1.26.

Results of pasture experiment of hogs on alfalfa for the period of 14 days, from June 3 to 17, inclusive.

	Lot I. Area, .25 acre	Lot II. Area, .53 acre.
Number of pigs.....	10	17
Initial weight, lbs.....	430	725
Final weight, lbs.....	508	906
Total gain, lbs.....	78	.181
Daily gain, lbs.....	5.60	12.9
Daily gain, per cent.....	1.20	1.58
Barley fed, lbs.....	127.20	220.90
Cost of barley @ $1\frac{1}{2}$¢.....	$ 1.91	$ 3.31
Value of gain at 7¢.....	$ 5.46	$12.67
Net return.....	$ 3.55	$ 9.36
Net return per acre.....	$14.20	$17.66
Daily net return per acre.....	$ 1.0.	$ 1.26

San Antonio.

During the week ending June 17, the maximum temperature was 99; minimum temperature, 64; greatest daily range, 39. A shower of .56 inch occurred on Tuesday, but it was not sufficient to be of any noticeable value to growing crops. The weather continued warm and dry.

Plowing of oat stubble was continued, the following rotation plats being plowed: A4-6, 12, 16, and A5-8. Plowing of field C6 was nearly completed. All of the cotton on the farm was cultivated. Corn on C3 was weeded. Soil samples were taken on cotton plats in the rotation experiments. Sudan grass in the rotation experiments was cut and raked.

Hauling of oats for hay was completed last week and threshing of oats was accomplished during the current week. Oats were practically a failure this season, the only plats making either hay or grain of any consequence were those plowed followed corn or milo. Oats on cotton land made very little growth and the yields were extremely low.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio (continued).

The following table gives the yield of oats for hay obtained on the various plats:

Plat No.	Yield per plat, lbs.	Yield per acre	
		Pounds	Tons
A5-3	276	1104	.55
A5-6	316	1264	.63
A6-6	808	3232	1.62
A6-7	644	2576	1.29
A6-9	668	2672	1.34
A6-11	432	1728	.86
B4-17	332	1328	.66
B5-7	648	2592	1.30

The following table gives the yield of oats for grain on the various plats:

Plat No.	Yield per plat, lbs.		Yield per acre, lbs.		Percent of grain
	Straw	Grain	Straw	Grain	
A4-6	280	76	1120	304	21.4
A4-12	167.5	20.5	670	82	10.9
A4-16	145	13	580	52	8.2
A5-8	247	23	988	92	8.5
A5-12	241.5	22.5	966	90	8.5
A5-16	247	25	988	100	9.2
A6-15	227	79	908	316	25.8
B5-8	331	29	1324	116	8.1
Average	235.8	36	943	144	12.6

Wiring of the farm buildings for electric lights was completed during the week. Connections were made with the service line previously extended to the farm by the San Antonio Gas and Electric Company, so that now all of the farm buildings are lighted by electricity.

Belle Fourche.

During the week ending June 23, the maximum temperature was 77; minimum temperature, 42; precipitation, 1.71 inches.

The corn and potatoes in the irrigated rotations were cultivated on Monday, and thinning of sugar beets commenced. The oats in A-III, 37-48 were irrigated. No more irrigation was done on account of the rains.

The tile drain in field A was completed. Where the seepage water came to the surface before the tile was put in, the water level

Belle Fourche (continued).

is now down to three feet.

Very little field work could be done on account of the rains. No alfalfa has, as yet, been cut on the Project.

Six ewes and six lambs were turned on plat A-II-36, on June 8. The first weighing was made June 10. The pasture ran out about the 19th, but rain prevented the sheep being taken out and weighed until the 21st. All of the ewes lost weight, the lambs being resonsible for the total amount of gain.

Date	No. of days	No. sheep	Initial weight	Final weight	Gain	Net return per acre.
6/10-6/21	11	10	731	760.5	29.5	$8.26

Net return per acre is figured at 7¢ per pound.

The date for the Farmers' Picnic, to be held at the Experiment Farm, has been set for Saturday, July 22.

Umatilla.

During the week ending June 17, the maximum temperature was 102; minimum temperature, 35.

Harvesting of the first crop of alfalfa was completed. On the lighter soils of the country the first crop of alfalfa is being harvested. Although it was considered to be quite short before cutting, it now appears that the yield will be average or better for this crop. On the finer soils at higher elevations, and along the river, the yield is heavy.

As a result of the severe winter, most peach trees in this part of the State are badly injured. While some are killed, the principal result of the cold is that of killing the hard wood of the trees. Practically all varieties on the Station are injured, and two were killed outright. The cool spring weather that has prevailed gave many trees an opportunity to recuperate, to a measure at least. Many are now making a fairly vigorous new growth.

No treatment was given these trees until growth began. During this week they were cut back severely to remove all the top that could be taken off to advantage. Each large branch was cut off immediately above the lowest strong shoot that it had thrown out. This gives a fair opportunity to renew the tops, and to keep the trees from getting too high.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Shoshone.

During the week ending June 17, 16 farms were visited and 5 other conferences were held.

One carload of hogs which was shipped to Denver on Thursday of last week was sold on Monday of this week. There were 1300 pounds shrinkage on the carload, but this was comparatively satisfactory as the shrinkage on most shipments runs over 1600 pounds. The hogs averaged 184 pounds in Powell, and were in fair condition. They brought within 20 cents of the top. The man who fed this load has been shipping to Denver market, and he says it does not pay to put a very high finish on hogs for this market.

Huntley.

During the week ending June 17, two pig feeding tests were started, one on Paul Sherman's place, and one on Geo. Howard's place. On Mr. Sherman's place, records will be kept on two lots of hogs to be fed as conditions will permit. It is planned to keep as accurate records as possible of feed and gains until the pigs are marketed. Similar records will be kept on one lot of pigs for Mr. Howard.

One day of this week was spent with Mr. Hansen, visiting farmers who are interested in the irrigated pastures.

Nine farm visits were made during the week.

An account of two recent cooperative swine shipments from Worden to St. Paul is reported below:

	No. 1	No. 2
Date of shipment	5/18/16	6/5/16
No. carloads in shipment	1	2
No. of farmers cooperating	2	3
Total no. of hogs in shipment	92	159
Av. weight per hog at home, Lbs	203	13-a. 124 146-a. 194
Total weight of hogs at home, Lbs	18700	29870
Total weight of hogs when sold, Lbs	18060	28560
Shrinkage, lbs	640	1310
Freight rate per cwt	43.5	43.5
Total expense of shipment	134.41	198.12
Total expense per cwt., including shrinkage	1.33	1.20
Gross returns per shipment	1713.27	2593.82
Net returns per shipment	1578.86	2395.70
Price received per cwt	$9.55	1625#@$8.25 26950#@$9.20
Net returns per cwt	$8.22	$8.00

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Huntley (continued).

The hogs were shipped together without marking, and the expense prorated per 100 pounds live weight. Thirteen pigs, weighing 1610 pounds, included in No. 2, were sold at $8.25 per cwt.

PERSONAL.

Mr. Roland M. Meade, formerly superintendent of the San Antonio Experiment Farm, died suddenly of acute dysentery, at the San Antonio Experiment Farm last Sunday. He had been ill for about one week prior to his death, but until a few hours immediately preceding his death his illness had not been considered dangerous.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Belle Fourche.

During the week ending July 1, the maximum temperature was 91; minimum temperature, 48.

The thinning of all sugar beets was completed on June 28. All corn and potatoes on both the irrigated and dry land were cultivated.

The alfalfa in the irrigated and dry land rotations, field I, and the variety tests in fields P and C were mowed, raked, and shocked. On Saturday the alfalfa was hauled in from the irrigated rotations.

The pasture grasses and pastures for sheep, hogs, and cattle, were irrigated during the week.

Mr. J. H. Jacobson, of the Scottsbluff Experiment Farm, visited the station on June 29 and 30.

Huntley.

During the week ending June 24, the maximum temperature was 86; minimum temperature, 42; precipitation, 1.83 inches.

Rain during the fore part of the week stopped field work and the men were employed in repairing fences and buildings. This rain was very much needed and was especially beneficial in preventing the soil from baking where young crops were irrigated during the previous week. It appears that a fair stand of grasses and clovers will be secured in the methods-of-planting-pastures experiment. The old pastures in field A-II continue to make unusually good growth, and it was necessary to clip with a mower on June 22 the one-half acre pasture on plats A-II-1 and 2, since much of the grass was headed and becoming too coarse for good feed.

The Project Pioneers' Picnic Committee met on June 19 and decided to hold the annual project picnic at the Experiment Farm on July 22.

Mr. W. W. Burr was a visitor at this station on June 24.

The gains made by fall pigs on alfalfa pasture are shown in the following table:

Rotation 67 - Alfalfa pasture and 2% corn.

No. of hogs	No. of days	Initial weight	Final weight	Gain	Av. daily gain	% daily gain	Daily return per acre.
51	10	152	170	18	1.8	1.17	
52	10	143	155	12	1.2	.77	
53	10	144	158	14	1.4	.94	
54	10	153	163	10	1.0	.69	
55	10	145	159	14	1.4	.94	
Total		737	805	68	6.8		$1.32
Average		147	161	14	1.4	.90	.26

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).

The results obtained in the sheep pasturing experiment, from June 10 to June 20, are shown in table below:

Five ewes and five lambs- One-half acre of mixed pasture grasses, field B-V.

No. of sheep	No. of days	Initial weight	Final weight	Gain
		Ewes.		
66	10	129	134	5
68	10	148	152	4
70	10	121	129	8
72	10	162	171	9
74	10	118	123	5
Total		678	709	31
Average		136	142	6
		Lambs.		
67	10	84	94	10
69	10	84	84	0
71	10	88	88	0
73	10	104	111	7
75	10	82	83	1
Total		442	460	18
Average		88	92	4

On June 20, the 5 ewes were sheared. The fleece of No. 66 weighed 16 lbs.; 68, 10½ lbs.; 70, 11 lbs.; 72, 11 lbs.; and 74, 9½ lbs., respectively. These weights were subtracted from the final weights of the ewes to obtain the initial weight for the following period, June 20 to June 30.

A shortage of pasture and muddy weather made it necessary to remove the 10 head of sheep from the pasture on June 21. They were placed in the feed lot and fed alfalfa hay. At the present time the pasture is up again and the ground is dry. The sheep will be returned to the plat in a day or so.

San Antonio.

Weather during the past two weeks has continued warm and dry; the maximum temperature for the week ending July 1 was 103; minimum temperature, 65; greatest daily range, 34. Good rains have fallen on nearly all sides of San Antonio, but only light showers have fallen in this immediate section. The total precipitation at the farm was .11 inch.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio (continued).

The total precipitation recorded at the farm since January 1 has been only 5.71 inches.

During the past two weeks the principal field work has been weeding. All cotton was weeded. Plowing of oat stubble on the rotation plats and C6 was completed. Roads were disked and grades and all orchards were weeded.

Watering of trees on the grounds and of the lawns has been continued at all times and even then it has been extremely difficult to keep the trees and grass in good condition.

The laying of the water main from the city was completed, and it is hoped that by the end of the week the four-inch main which will be laid from the main line to the farm buildings will be completed and service connections made.

Scottsbluff.

During the week ending July 1, the fall pigs which had been on alfalfa pasture were weighed out and replaced by spring pigs.

On the night of June 29, one of the large checks in the Government lateral at the northeast corner of the farm washed out, and the water had to be shut off. It is hoped that the break will be repaired within a few days so that irrigation water will again be available. Some of the crops are beginning to suffer.

The grain that has been irrigated since the hail storm has made a remarkable recovery. The rapid growth of this crop, as well as some of the other farm crops, is perhaps due to the unusually warm weather during the week. The grasses in the pastures have made a better growth than usual. The plants in the grass garden have been cut again, and dry weights secured.

The Burlington Railroad Company is surveying a stub line from the sugar factory to what is known as Sun Flower Camp, 4 miles northwest of the Experiment Farm. The first survey made passed through the southwest corner of the farm, cutting off about 10 acres of land. The second and third surveys passed through the farm on the south line of field K, and extended northwestward across fields I, E, D and A. Objection was made to the civil engineer in charge of the survey, to whom it was suggested that a road built on the line of the first survey would interfere less with the experiments in progress than one built on the second and third surveys, but this suggestion apparently was not taken seriously.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Boise.

The week ending June 17 was spent on the Tieton Project with Mr. Bean who is giving considerable attention and time to silos. Men who have silos, as well as men who contemplate building, were visited. One day was spent on the Sunnyside Unit, where dairying seems to be much farther advanced than on the Tieton, and where silos of various models are numerous, practically all being some form of wooden structure. The most popular type seems to be a wooden hoop silo with two thicknesses of 1x14 flooring with paper between, inside of the hoop, and one thickness of flooring outside. Concrete construction is not practical because of the difficulty of securing sand and gravel. Commercial silos are not generally popular. One metal silo was examined on the Sunnyside Unit, which was of special interest from the standpoints of simplicity of construction and resistance to wind and weather, but which is not practical at this time on account of the increase in prices of steel. On the Tieton Project the "home-made stave" silo is generally popular, and perhaps justifiably so, because of an unusually low price for lumber and because of the need of a cheap silo that may be moved, most of the farmers having only temporary barns and not being sure of the best location for permanent structures.

Corn is much further advanced on the Tieton and Sunnyside than on the Boise, although only a few fields were seen there with satisfactory stands, and it is all backward on account of the cool weather.

One day of the week ending June 24 was spent on the Umatilla Project with Mr. Jones, in visiting farms on the Projects and the Government Experiment Farm, where Mr. Dean explained some of the work that is being done.

Of special interest was a visit to the farm of a Mr. Roberts who is attempting to produce alfalfa on land that receives a very small amount of water, and this only in the early part of the season. Some success was promised although the work has not been carried on long enough to give any definite results.

On Thursday the dairy herd on the State Farm was tested for butterfat and arrangements made for keeping regular feed and production records with the herd which is on pasture without other feed; also, to weigh pigs for "hogging off" tests with different crops. A number of other similar tests have been planned.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

Some time has been spent with Pig Club members at Greenleaf. The Greenleaf club has been organized for three years and has done exceptionally good work. The club is larger than ever before and some good results are expected.

Uncompahgre.

Nineteen farms were visited during the week ending June 17, and 4 calls for service were received.

Two days were spent in visiting the members of the pig clubs. Several of these requested that their pigs be weighed. The interest in this work is very good.

Mr. Rinehart, of the Minidoka Project, arrived on Friday and the remainder of the week was spent in going over the prospects in regard to a cooperative grazing association for the next year. In this connection a visit was made to the Forest Service headquarters at Delta, where it was reported that the range is carrying at present 35,000 cattle and horses and 65,000 sheep. This uses all the range available. On Saturday a trip was made to the ranger station on one section of the Uncompahgre reserve, for the purpose of becoming familiar with the feed conditions. Good watering places are plentiful on this range, and the pasture is very good.

During the week ending June 24, 5 calls for service were received, and 9 farm visits were made. Four dairy herds were tested for butterfat.

Some time was spent in the investigation of the source of sand and gravel for concrete work on the Project with the idea of advising the farmers in the erection of concrete silos. The farmers in a number of cases are considering the erection of silos and are having to pay too high prices for the wood stave and other makes which the agents are handling. It was found that there is a very good grade of material for the making of concrete along the river and a special price can be had on cement so that the concrete silos will be a great deal cheaper than the other types.

There is some discussion in favor of the hollow tile silo. So far there is no hollow tile manufactured on the Project that will be suitable for the work. One farmer has recently made arrangements for a 1/4-ton silo of this type which is to cost him $500. It was found that the weight of the material in the silo, which is to be shipped from

DEMONSTRATIONS ON RECLAMATION PROJECTS

Field Notes.

Uncompahgre (continued).

Iowa, is 44 tons.

The farmers on the Project are very busy haying. The first cuttirgwas very short but of very good quality.

Hogs are advancing in price so that the farmers are feeling more encouraged than a week ago. The last report shows the tops are $9.60.

During the week ending July 1, 9 farm visits were made. A part of the week has been spent in the office in making out reports.

One carload of hogs left during the week for the Denver market. The details of the shipment have not been received.

The farmers are mostly through with the first cutting of alfalfa. The new crop is doing very well as are all other crops. There is a good supply of water this season and although the weather has been very dry the crops have been kept growing.

A visit was made to Delta for the purpose of aiding the business men in establishing a cheese factory at that place. The business men are furnishing the plant. It is figured that a $1,000 plant will be needed. A cheese maker of Hotchkiss will have charge of the plant. The larger part of the milk will be furnished from the Project.

Some time has been spent at the local tile factory during the week for the purpose of investigating the possibility of manufacturing hollow tile for silos. It is found that the tile being made is not of the right quality to use in silo construction. It is not possible for the local plant to vitrify the tile.

Prices paid for butterfat are 24¢ for first grade cream, and 20¢ for the poorer grade.

Truckee-Carson.

The cooperative marketing of hogs received the major portion of attention during the week ending June 24. A visit was made to San Francisco and Los Angeles, to investigate the marketing advantages of the two places. No Union Stock Yards or commission firms for buying stock are located in either place, but several packing firms are represented in each city. The prices paid in the two cities were found to be practically the same. On account of the greater freight charges and length of shipping time to Los Angeles, as compared with San Francisco, the latter market will probably be utilized entirely by this Project.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued).

The plan of cooperative marketing of hogs from this Project was put before the people in articles submitted to the local papers and by circular letters. As a direct result of this work, a carload of first class hogs will be shipped out about July 15 to San Francisco. It is hoped that this introductory shipment will result in a cooperative shipping association.

Huntley.

The early part of the week ending June 24 was spent in Bozeman and vicinity looking up dairy cattle and sheep breeding stock.

Two days were spent in the office and one in Billings. Nine farm visits were made during the week, and 27 milk samples were tested for Project farmers.

FIELD NOTES.

Yuma.

During the week ending June 17, the maximum temperature was 114; minimum temperature, 58; greatest daily range, 47. Four days of the week registered maximum temperatures as follows: 106, 111, 114, and 110, with the remaining days 100 or above. The entire week was unusually hot for this season of the year. A warm drying wind occurred during the two days which dried out the light soils severely enough to call for an extra run of water late in the week. The total area irrigated on the Experiment Farm was 43 acres.

A new evaporation tank was substituted for the old one which was badly rusted and beyond repair.

A great deal of hoeing and cultivating was done. Onion seed was harvested from A-12-2 and potatoes from A-14-1 and A-13-6. Alfalfa hay was harvested from C-23 and Sudan grass hay from E-3 and 4.

Tuxtla cotton progeny plantings on E-2 were hoed and thinned.

Threshing of flax experiments was completed.

During the week ending June 24 the maximum temperature was 105; minimum temperature, 55; greatest daily range, 45. Twenty-three acres were irrigated.

All of the orchards of pecans, figs, dates, and deciduous fruits were disked and cultivated. Also, all gardens and nurseries were cultivated. Cotton on A-23, D-24, 25 and 26 were hoed and cultivated.

Alfalfa was harvested from plats B-6 to 10, C-21, 22, 24, D-17, 18, 19,22 and 23.

A variety test of sweet sorghum was planted on C-25 and 26 in 3-ft. rows.

Bermuda grass was seeded among the Sudan grass on B-39 to 41 for pasture.

A summer hog-pasturing test was inaugurated on the 18th, on pasture E-8. The average initial weight of the 6 hogs was 70.9 pounds. The hogs were all Poland China-Duroc Jersey crosses , and are of good quality. The experiment consists of three gilts and three barrows, farrowed February 2, 1916.

Dwarf milo was planted on E-9, to be used as grain in finishing for hog pasturing experiment.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Truckee-Carson.

During the week ending June 24, the maximum temperature was 87; minimum temperature, 34. During the week ending July 1, the maximum temperature was 86; minimum temperature, 39.

A new machine shed has been constructed facing the old one. The dimensions are 60 x 16 feet.

The first cutting of alfalfa has been made. The yields were somewhat below normal for the first crop. The alfalfa was injured by heavy frosts during May. The average yield per acre of alfalfa and sweet clover on the entire farm was 1810 pounds per acre.

On June 30, the Y series and H-2-3-4 and 17 were irrigated.

The following table shows the yields of the first cutting of alfalfa and sweet clover in field Y, where the experiments in alkali land reclamation are in progress, from the half-acre plats.

Plat	Crop	Treatment	Yield per acre, lbs.
Y 1	Sweet clover	Gypsum-Manure-Drain	1140
2	" "	Check	1380
3	" "	Gypsum-Manure-Drain	1840
4	Alfalfa	Gypsum-Manure-Drain	200
5	"	Check	950
6	"	Gypsum-Manure-Drain	1760
7	Alfalfa	Gypsum-Manure	2150
8	"	Check	1900
9	"	Gypsum-Manure	2350
10	Alfalfa	Gypsum	1270
11	"	Check	0
12	"	Gypsum	80
13	Sweet clover	Gypsum-Manure-Drain	1860
14	" "	Check	520
15	" "	Gypsum-Manure-Drain	1880
16	Alfalfa	Sulphuric acid	460
17	"	Check	0
18	"	Sulphuric acid	200

The pigs in both lots I and II have made poor gains so that the feeding during the past two weeks has been conducted at a loss. The

Truckee-Carson (continued).

reason for this sudden decline in growth is not clear. During the preceding period of two weeks very satisfactory gains were made. The figures for the 14-day period, June 17 to July 1, are given below:

	Pigs on alfalfa pasture. Area .25 acre. LOT I	Pigs on alfalfa pasture. Area .53 acre. LOT II
Number of pigs.....	10	17
Initial weight, lbs.	508	906
Final weight, lbs.	566	984
Total gain, lbs.	58	78
Daily gain, lbs.	4.1	5.6
Daily gain, per cent.	.86	.59
Barley fed, lbs.	293	523
Cost of barley at 1½¢.....	$4.39	$7.85
Value of gain @ 7¢.....	$4.06	$5.46
Net return.....	-33¢	-$2.39
Net return per acre.....	-$1.32	-$4.52
Daily net return per acre.....	-9¢	-32¢

Scottsbluff.

During the week ending July 8, the small grain and the corn made a good recover from the effects of the hail. This was partly due to irrigation and the extremely warm weather. It is hoped that the hot weather will continue for several weeks.

The Government check that was washed out, as reported last week, gave a little more trouble this week and water was again shut off.

Umatilla.

During the week ending June 24, the maximum temperature was 83; minimum temperature, 46; precipitation, .3 inch.

The regular work of irrigating was continued and fields A2, B3b, and B5 were hoed.

The application of water to, and percolation from, the lysimeters

Umatilla (continued).

for the period between May 18 and June 21 was as follows:

Period.	Application to each lysimeter inches	Percolation from lysimeters			
		No. 1	No. 2	No. 3	No. 4
May 18 to May 24	1.5	1.070	.059	.044	.037
May 24 to May 31	2.0	1.241	.746	.030	.040
May 31 to June 7	2.0	1.150	1.328	.028	.034
June 7 to June 14	2.0	1.476	1.480	.161	.054
June 14 to June 21	2.0	1.653	1.377	.150	.106
Total . . .	9.5	6.590	4.990	.413	.271
Total for crop season to date.	17.00	10.83	5.32	.76	.58

Since the applications were increased to two inches (June 24) warmer weather has prevailed, and as a result the percolate from Nos. 3 and 4 has not increased, becaused of increased evaporation and transpiration. The percolate from Nos. 1 and 2 has gradually increased.

The vetch in No. 2 was turned under May 11, at which time soy beans were planted. Since the percolate did not increase soon it appears that the soil and manure crop absorbed approximately as much water as was transpired by the vetch. This, with a possible increase in evaporation, account for the lack of an increase in percolate from Lysimeter No. 2, after the vetch was turned under. Of the total percolate for the season from No. 2 (5.32 inches), 4.98 inches occurred after the beans were planted.

The crop of alfalfa was removed from Nos. 3 and 4 on May 31, after which date no increase in percolation occurred.

During the week ending July 1, the maximum temperature was 83; minimum temperature, 46; precipitation, 1.21 inches.

The ncessary materials were assembled and a concrete floor was laid in the barn. A pit was also made to collect all the manure and litter from the stable.

Unusually cool and damp weather prevailed during the week. Corn and other crops requiring warm weather are growing slowly, but alfalfa is doing well.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio.

During the week ending July 8, the maximum temperature was 98; minimum temperature, 67; greatest daily range, 28. Cloudy weather prevailed throughout the greater part of the week. Light showers fell on 4 days. The principal rain of the week came on Wednesday afternoon and night, the total precipitation being 1.71 inches. This was sufficient to wet the soil rather thoroughly and was of much benefit to the orchards and ground plantings, and to cotton and forage crops. Cotton had practically ceased growth on account of dry weather. Cotton on the farm looks well and prospects are favorable for a good crop. In spite of the dry weather during the last month there is rather a large number of boll weevil present at this time. This has been a very severe year on trees and the orchards were suffering severely from drought before the rain. Many of the trees in the Mexican seedling peach orchard are fairly well loaded with fruit, but the fruit is as yet very small. It is hoped that the recent rains have been sufficient to benefit these trees to the extent of maturing the fruit.

On account of the wet weather, not much field work was possible. Sorghum on the rotation plats was cut on Monday. Weeding of miscellaneous fields of cotton was completed. On Friday afternoon and Saturday, cotton and orchards were cultivated. When too wet for field work, time was utilized in greenhouse work, in cleaning barns and corrals, and in miscellaneous work.

Belle Fourche.

During the week ending July 8, the maximum temperature was 99; minimum temperature, 52.

The harvesting of first cutting alfalfa is completed except the hauling from field P. The last two weeks have been hot and dry, and all grains and alfalfa have been irrigated. Some of the dry land crops are beginning to burn.

The fall pigs were removed from the alfalfa plats in rotations 65 and 69 on July 8. The results obtained from pasturing these plats are given in full in the table on the following page.

Belle Fourche (continued).

Rotation 65 - 4 hogs.

Dates	No. days	Weights Initial	Weights Final	Gain Total	Gain % Daily	Gain per day per hog	Corn fed	Net return per acre.
5/13-5/23	10	409.0	403.5	-5.5	-	- .13	82	-$4.82
5/29-6/8	10	432.5	476.5	44.0	.96	1.10	88	8.80
6/9-6/17	9	476.5	516.0	39.5	.87	1.10	86	7.62
6/18-6/27	10	516.0	552.5	36.5	.70	.91	103	6.10
6/28-7/7	10	552.5	610.0	57.5	.99	1.44	110.5	11.68
Totals..	49			172.0			469.5	$29.38

Rotation 69 - 4 hogs.

5/13-5/23	10	413.0	413.5	.5	.01	-	83	-$3.18
5/29-6/8	10	452.5	479.0	26.5	.60	.66	90	3.82
6/9-6/17	9	479.0	525.0	46.0	1.03	1.28	86	9.44
6/18-6/27	10	525.0	570.0	45.0	.82	1.13	105	8.40
6/28-7/7	10	570.0	616.5	46.5	.78	1.16	114	8.46
Totals..	49			164.5			478	$26.94

The net return per acre was calculated on the basis of corn at $1.00 per hundred, and pork at 7¢ per pound.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

Twenty-three farms were visited during the week ending June 10. Three office conferences were held with farmers. Two calls were answered by farm visits, 2 follow-up visits were made, milk was tested on 2 farms, silo construction was discussed with 12 farmers, and one pig feeding demonstration started with Mr. Lewis, whose 61 spring pigs were dipped for lice, the boars castrated and the entire lot weighed up.

Messrs. Doane and Frevert, of the U. S. Dairy Division, visited the Project, Mr. Doane for 2 days, and Mr. Frevert for one day. The purpose of their visit was to look into the prospects for the manufacture of butter or cheese in community plants, preferably cooperative concerns. The privately owned creamery and cheese factory at Cowichee was visited and 8 farmers were also visited in this connection. There are 2 communities in which over 200 cows are located within hauling distance for a cheese factory. The general features of cooperation in cheese making were discussed with leading farmers in each community.

Mr. Price, of the State College Extension Department, spent one day on the Project.

Thirty-four farms were visited during the week, 8 calls for assistance were received, dairy records were discussed with 3 farmers and silos were discussed with 11.

Twenty-eight cattle in six herds were vaccinated for blackleg. These were cattle that have been bought to fill up herds for which grazing permits have been obtained, or which will be pastured during the summer in pastures known to be infected with blackleg.

Mr. Ireland spent 5 days on the Project. During this time particular attention was given to silos in use on the Tieton and Sunnyside Projects, to a few men who contemplate building silos, to pastures for dairy cows, and feeding pigs on alfalfa pasture. One day was spent with Mr. Ireland and Mr. Farr, Agriculturist of the Sunnyside School District, examining types of silos on the Sunnyside Project, and some grass pastures on alkaline land there.

The wood hoop silo with an outer wall of 4-inch flooring and an inner wall of 2 thicknesses of flooring and 1 of paper is undoubtedly the most popular on the Sunnyside Project. There are a number of stave silos, several octagonal 2x4 "commonsense", and a few pit silos. One farmer has a steel silo, made like a steel grain tank, but the present cost makes it impractical. Three farmers have constructed the "Kansas" silo. They are made of 4-inch fir flooring, put up like ordinary staves and drawn tightly together. A thickness of acid proof

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

paper is then put outside the staves and this is covered with boards bent around the silo and nailed to the staves. Mr. Johnson has a silo of this type, 10x24 feet, above the ground, with a 6 ft. pit, approximately 47 tons capacity, that costnot over $60, including all material and labor. This undoubtedly is the cheapest home-made silo which was seen. The pit was dug in soft earth and the carpenter had had experience in building silos of this type.

Farmers on the Sunnyside are reclaiming some alkali land by flooding and seeding to pastures. Returns from pastures obtained in this manner vary from $10 to $14 per acre per year on land which would have been totally unproductive for other purposes. A native grass, Puccinellia distans (L) Parl. seems to be better adapted to this purpose than any other on the Sunnyside. It is not a heavy yielder but grows sufficiently to shade the soil and make it possible to obtain stands of other grasses, such as blue grass and white clover.

Thirty-three farms were visited during the week ending June 24. No farmers called at the office, but 15 calls for assistance were received and answered by farm visits. Milk was tested on 18 farms, dairy records were discussed on one farm visit, and silos were discussed with 4 farmers. Two weighings were made for pig feeding tests.

The price of prime hogs has dropped during the last 10 days to $7.50 on the local market. The bulk of the local sales, $7 to $7.25, are about $1.00 under the bulk sales reported from the coast. Two commission buyers for the coast markets, chiefly the Seattle market, have recently inserted advertisements in the daily papers for hogs for shipment. At the last report neither of the buyers had received many hogs, due probably to the lack of advertising which they have obtained. Both buyers plan to buy on a small margin and to hold and feed in local yards, if necessary, until car lot shipments can be made up.

During the week ending July 1, 29 farms were visited, and 6 calls for assistance were received and answered. Records were discussed with 5 farmers, and 6 men were visited in regard to silos and silage.

The first 3 days of the week were spent on the Tieton Cattle Range with members of the Cowichee Cattle Company, a cooperative grazing association. The herd of about 500 head was turned on the foot-hill range early in the spring. At this time they are collected and driven into the Tieton River Basin, in the Ranier National Forest. Reports

Tieton (continued).

of dead animals have come in from the early range, and several animals have been found in various stages of poisoning. The trip was made at this time to become acquainted with range conditions. Between 25 and 30 head of young cattle are known to have been poisoned in this herd this spring. Six were found poisoned during the drive, and 2 were left to die. The other 4 were able to make the trip with the herd and seemed no worse when they were left than when they were found. There are still about 250 head on another part of the foot-hill range, and the loss in this portion of the herd will not be known until a second "drive" is made into the Tieton Basin.

A number of unknown plants were gathered which the stockmen have been told were poisonous. These were sent to the State College for identification. A collection was also made of the principal unknown grasses found on the range. Several of the farmers own or have long term leases on portions of the early range, and desire to improve the pasture if possible by seeding grasses which are known to grow on the range, or by rotation pasturing to allow the grasses a better opoortunity of reseeding.

One day was spent on the Sunnyside Project, at the invitation of Mr. Farr, the instructor in agriculture at the Sunnyside High School, and Messrs. Nystrom, Charlton and Phillips, of the State College, on a silo excursion. The Sunnyside and Grandview business men furnished autos to carry about 25 farmers and a number of silo and lumber men to visit different types of silos in the vicinity of Sunnyside and Grandview. Several types of silos were visited including the popular wooden hoop silo, the stave (commercial and home-made), pit, octagonal 2x4 ("common-sense"), Gurler, modified Wisconsin, Columbia steel silo, and the "Kansas" type.

Mr. Hegnauer, soils and crops extension man from the State College, spent one day on the Project visiting some of the alfalfa fields which have not grown well during the last two seasons.

Huntley.

During the first half of the week ending July 1 a trip was made to Anaconda, where several Holstein bulls and a large band of sheep were inspected in the interest of Project farmers who are prospective purchasers.

Five farm visits were made during the week. The remainder of the time was spent on office work.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka.

During the week ending June 17, two commission and produce firms were visited in regard to the establishment of some means of cooperation with the cooperative creameries and cheese factories of southern Idaho in solving the marketing problem. Both expressed their willingness to work in this way provided they could be guaranteed first class and uniform product, and a uniform supply for winter as well as summer.

Prospects are good for one or more cooperative bands of sheep made up of flocks from Project farms. At this time it seems as though it is much better to try to secure the range for this purpose in the Sawtooth National Forest rather than in the Minidoka. The Sawtooth Forest lies north of the Project. A difficulty that may occur with the making up of such a band is that there are several different breeds of sheep on the farms, the majority of which are the mutton breeds.

During the week ending June 24, feeder lambs have been contracted for in the Ft. Collins district for 7½ cents a pound. There are yet many to be bought. Reports that as high as 8 cents is now being paid could not be verified. At this price it is questionable whether it is advisable to undertake feeding operations of this kind, although money can now be obtained for this purpose.

On a recent trip to Denver it was found that, while some dissatisfaction with the Denver markets has been expressed by the Project shippers, the fault lies mostly with the farmers. The Denver market requires a heavier and better finished hog than the Project has been putting out.

One of the greatest difficulties with the improvement of the swine growing industry at the present time is the fact that all market hogs, excepting old stock, are bought at the same price, There is no premium for well bred and well finished hogs. In carload lots made up in this way the best hogs sell the poorer in the shipment and while the buyers like to secure this kind of stock and have words of commendation for them, there is no material advantage in finishing them in this way. A cooperative shipping association would do much to overcome this evil.

The week ending July 1 was spent in making farm visits and in informing business men, district leaders and survey men of the new

Minidoka (continued).

plan of the hog cholera control work. No particular difficulty is anticipated, for the people as a whole are well informed on cholera and in some districts could carry on the work with but very little outside help. A number of swine growers and some business men favor having the serum furnished by the County.

Cholera broke out during the week on the farm of Floyd Markham, 4 miles east of Rupert. This was the first case in this district since last October, and the first on the Project since May 4. The origin of the infection is unknown.

The first cutting of alfalfa is now being put up. The crop is far short of the average and is of inferior quality. Some is being baled and shipped to Ogden and Salt Lake. The price for this is $8.00 a ton, delivered at baler. Some has been sold at $12.00, baled and put on the cars. In the vicinity of Burley, $6.00 for the entire crop in the stack has been refused. Inquiries for approximately 840 tons of hay have been received by this office from outside parties.

Hogs are $7.50 per cwt. Butterfat is 26¢.

Shoshone.

During the week ending June 24, 13 farm visits were made, 7 men called at the office, 5 other conferences were held, 14 cows were tested, and one hog feeding test was completed.

The mixed grasses which were sown by 20 Project farmers are doing nicely. Most of these grasses are up and as a rule fair stands have been secured. A few of the men who ran short on cow feed, yielded to the temptation to pasture cows on the nurse crop. One of the main disadvantages of a nurse crop seems to be the temptation it affords the farmer to use it, to the detriment of the grasses.

Two herds of registered Holsteins near Cody were visited to inspect the breeding stock for Mr. Christopher, and for farmers on this Project who might be interested. The cattle which were seen were well bred cattle and good individuals and probably were good producers, but, as is often the case, the owners have not kept complete records of production. Both of them have been weighing the milk of each cow regularly, but have done very little testing.

The calves which were shipped in by express from Wisconsin were visited during the week, and were found to have fully recovered from their sickness, and to be in satisfactory condition.

A carload of hogs which were shipped to Denver Thursday of last week was sold on Monday's market. The shrinkage on this car was 1300

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone (continued).

pounds. which is about as low as is ever obtained from here.

One day during the week was spent with the State Leader of the boys' and girls' clubs, visiting members. Only two boys have been keeping up the work in the boys' pig club. Since each member is required to raise one-eighth acre of grain and hog it off when ripe, the boys seem to have been unwilling to undertake the work.

During the week ending July 1, 16 farm visits were made, 14 cows were tested in 2 herds, and one hog feeding test was started.

Many farmers have been using alfalfa as a soiling crop for the last two weeks because they were out of hay. As alfalfa hay was selling for $10.00 per ton in the stack, many farmers sold all they thought they could spare and since the spring was cold and alfalfa matured late, they ran out of feed. Several cows have been lost by bloat in feeding alfalfa as a soiling crop. To prevent this, most men have been feeding 5 times a day as the cows tend to overeat when fed only three times a day. Some of the farmers have hired herders to herd their cows on the range in the hills surrounding the Project, bringing them home at night and taking them out in the morning. The cows decreased greatly in their milk flow when put on this range.

The grasses which were sown in the tests for pastures are doing well as a rule. The best stand was secured by a man who after preparing his ground, corrugated the field diagonally to the slope and irrigated. When the ground became dry enough to work, he harrowed the ground well with a spring-tooth harrow with the slope of the land. He then mixed the grass seeds and sowed them with an alfalfa renovator which has a seeder attachment which scatters the seed in front of the shovels. He did not sow all of the seed the first time over, but sowed the remainder crosswise of the field, having broadcasted the clover by hand ahead of the second seeding, and then irrigated the field the second time.

A carload of hogs which was shipped last week was sold on the Denver market on Monday of this week. The shrinkage on the carload was 2100 pounds, which is said to be the greatest shrinkage ever reported on a carload of hogs on the Denver market. The shrinkage was due partly to the hot weather and partly to the hogs having been unloaded three times for feeding. One man, whose hogs averaged 195 pounds, received $9.40 per cwt. on the Denver market. Six fat sows averaged $9.00 per cwt. Nine pigs averaged 120 pounds, and brought $8.10 per

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone (continued).

cwt. The hogs which averaged 195 pounds were farrowed the first of last November and were fed grain only during a few of the very cold winter days. They were on alfalfa pasture and grain stubble and fed alfalfa hay until 25 days before they were shipped, when they were put up in a dry lot and fed ground wheat.

Truckee-Carson.

During the week ending July 1, 13 farms were visited, and 26 calls for assistance were received.

Considerable work has been done in cooperation with the Veterinary Department of the University of Nevada in testing of dairy herds for abortion and tuberculosis. There is no law in the State regulating the sale of dairy products from tuberculous cattle, but every effort is being put forth in this valley to get the dairymen to have their cattle tested and weed out reacting animals. It is hoped in this way to establish the dairy industry here without the high percentage of tuberculous cattle so often present in older dairy communities. The testing for abortion is a part of a campaign against that disease, which the University of Nevada has inaugurated in this Valley. The blood samples for the tests are taken by this office, or by a representative of the University of Nevada, and sent to the laboratory at Reno for examination.

One of the mercantile establishments of Fallon has offered to invest the sum of $100.00 in registered male and female pigs to be offered as premiums at the Nevada State Fair to be held at Fallon, beginning September 8. The selection of these pigs will be left to this office, and hogs that will be available at the opening of the Fair have been located. It is the desire of the donor to give pigs weighing from 50 to 60 pounds.

Boise.

One case of hog cholera occurred during the week ending July 1; it was not on the Project. There were only nine hogs in the herd, 2 of which were sick at the time treatment was given. One of these has since died.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

A herd of 58 shoats were weighed for Mr. Hulbert, of Nampa, on Wednesday. Some trouble was experienced with the outfit because the chains on the crate were too light and broke a number of times. After heavier chains had been obtained, 20 head of 114-pound hogs were weighed in 10 minutes. These hogs are being fed buttermilk , oats and green alfalfa. Three other feeding tests were arranged for during the week.

One small herd of dairy cows was tested for butterfat, and arrangements were made to keep feed and production records with 3 herds in one locality.

The members of 3 pig clubs were visited. Also, a number of breeders of purebred swine were visited to enlist their cooperation in the club work.

The second round of the Boise Valley Cow-Testing Association has been completed. The showing made by the various herds was considerably better than for the first month; 67 cows went on the "honor roll", making 40 pounds or more of fat for the month, and 17 herds averaged 30 pounds, or better, of fat per cow. The same herd which held first place for the preceding month again stood at the head of the list, although the average for the herd had fallen from 46.4 pounds to 41 pounds. The highest individual record was made by a Holstein cow, and was 79.3 pounds of fat. The feed-cost of production is running remarkably low, due, Mr. Beier, the tester, states, to the fact that many of the cows are fresh and on green feed.

An unusual amount of bloat has occurred this year. White clover has been the commonest cause of the trouble although it had not previously been considered dangerous. A number of pastures seem to have gone largely to white clover and will be cut for seed. Some men who have pastures are keeping their cattle in dry lots. In one herd production dropped 10 pounds of fat per cow from one month to the next because the cows had been taken off of pasture.

Uncompahgre.

During the week ending July 8, 14 farm visits were made, and 8 calls for service and information were received. Three dairy herds were tested for butterfat.

On Monday 2 calls were received to investigate sickness in a dairy herd and a suspected case of hog cholera. The dairy herd was found to be affected with distemper. One cow showed a severe swelling of

Uncompahgre (continued).

the throat which was very painful. The farmer was advised to consult the veterinarian. The suspected case of hog cholera was only a minor ailment and the sickness had disappeared by the time of the visit.

At the request of a small number of farmers assistance was given in locating hogs for a cooperative shipment. There were not enough hogs ready so that shipment will be postponed for a couple of weeks. The farmers are pretty well sold out at present so that it is difficult to get together enough hogs for a shipment.

A car of grade and purebred cows and heifers were brought in during the week from Wisconsin, a local veterinarian making the importation. He selected the stock in the northern part of the State. There were 20 head of Holstein cows in the shipment, 4 of which were purebred. The cost of importing these was less than $12 per head. The time required to bring them to the Project was 11 days. Some of the cows were due to calve during the trip. Four heifer calves were dropped in the car, and 3 of them were saved. The purebreds cost $250, and the grades from $75 to $100, besides the freight.

One of the farmers was assisted in the selection of a pure bred Guernsey bull from a list of pedigrees received from the Williams farm in Waukesha County. The bull is of excellent breeding and is 11 months old. He was sent through by express and arrived in very good condition. The rate was $6 per hundred. The purchase price of the bull was $175, and the breeder stood part of the express charges.

As a result of a celebration in Montrose on July 4, the local creamery sold 350 gallons of ice cream from their plant. The price paid the farmers for sweet cream is 35¢ per pound butterfat.

A carload of nicely finished hogs recently sent to the Denver market brought the shipper $9.65 per cwt. at Denver.

Umatilla.

The following notes are from Mr. Jones' report for the month of June:

On June 14 the first opening of lands on the West Extension was begun. Approximately 2700 acres of land was opened. Of this, about one-third is Oregon Land and Water Power Company holdings, one-third, other private lands, largely Northern Pacific, and the remainder, public. In all, 26 farm units of public land were thrown open. The irrigation system of the Oregon Land and Water Company about Irrigon has been taken over by the Government.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Umatilla (continued).

Considerable time during the month was spent in visiting ranches of farmers on the old Oregon Land and Water Company tract, and a general idea was obtained regarding the experience of these men as to methods to be followed by new settlers along the Columbia on the West Extension, and of the mistakes to be avoided. All agreed that tracts should be reclaimed in small sections, each section being graded in the best manner possible before seeding. The tendency of the new settlers is to follow a course quite contrary to this. Although many of these men are orchardists, they advise getting all new land into alfalfa first and then adding such other crops as promise to be profitable.

Reconnaissance was made of the new land opened to settlement between Irrigon and Castle Rock. Seven water-right applications on homestead entries have been filed. Work has been started on 240 acres of private land and indications are that more will be settled soon.

Two sets of notes containing suggestions to new settlers have been prepared, and are now being distributed to new people who file on or buy land on the Project. It is hoped that this will be one of the means of preventing some of the serious mistakes commonly made by new settlers.

During the month 57 farm visits were made and 26 requests for assistance were received.

North Platte.

During the week ending June 10, a shoat feeding test was started on the farm of Mr. Hinkle in which 160 spring shoats will receive corn in a self-feeder while running on alfalfa pasture. This should be a very interesting test, as it may be compared with other shoat feeding tests in which the shoats receive a limited amount of grain in connection with alfalfa pasture. The 160 pigs were weighed up on the steel-yard weighing apparatus in 25 minutes.

Most of the week was spent out in the field in response to calls and doing general field work.

During the week ending June 17, two interesting shoat feeding demonstrations were started. In these tests, 93 spring pigs will be fed a ration of about 2-1/2 per cent. corn while running on alfalfa pasture. In one case the corn will be supplemented with meat meal

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

for a part of the feeding period.

Since the discontinuance of the eastbound morning passenger train, the fat hogs going to Denver are shipped out of the Valley on a special train each Monday morning, passing through Mitchell about 6:30.

During the latter part of the week, a trip was made to Lewellen, about 60 miles east of the Project, for the purpose of investigating the swine industry in that section, which is one of the most intensive hog growing sections in Nebraska. Crops have been grown in that locality under irrigation for about 20 years. The main source of the farmers' income has been from hogs, and it is quite evident that they have made a success of the enterprise as all farms are well equipped, and the country shows that the farmers have been prosperous. As corn and alfalfa grow well there, it is well adapted to growing hogs. The Poland China hogs predominate, though there are quite a number of Duroc-Jerseys.

Up until the last few months the Lewellen locality has been free from hog cholera, but the disease is now doing considerable damage. One farmer visited lost 325 out of 350 spring pigs. Unfortunately most of the farmers do not think the trouble is cholera, so they are doing nothing to prevent the spread of the disease. The cholera is a sub-acute form, much the same as prevails on this Project.

Monday of the week ending June 24 was spent at the stock yards in Omaha. The receipts numbered 8,500 hogs. Duroc-Jersey hogs predominated, with the Poland Chinas coming close behind, then the Chesters. These three breeds make up about 95% of the offerings. The remaining 5% was made up of Tamworths, Hampshires, Yorkshires, and a very few Berkshires. Only a very few loads of straight colored hogs were on the market, and as a whole the offerings were only fair, very few of them really being in good market condition. Tops sold for $9.50. According to reports the receipts have been falling off during the last few months at the Omaha market. During the months of March, April and May, 1916, the receipts were 13,187 head less than during the corresponding period in 1915.

The next two days were spent at Lincoln, attending a Rural Life Conference, and attending to other matters connected with work on the Project.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka.

NOTES ON THE DENVER HOG MARKET.

During the month of June, Mr. Rinehart made a trip to points in Utah, Colorado, and Wyoming, visiting, among other things, the Denver stock yards. The following notes are taken from Mr. Rinehart's report of this trip.

"Some time was spent at the Denver Union Stockyards studying the market types and requirements and marketing problems. While the Project shippers had expressed considerable dissatisfaction with this market the fault was not so much with the market as with other factors.

"The hog that has been topping the Denver market is heavier and better finished than the hogs that the farmers of the Minidoka Project have been shipping. From the beginning, most of the Project hogs have gone to Los Angeles, which is a market of light hogs, no objection apparently being offered if the weights run between 135 and 200 pounds. Consequently, the average will run from 150 to 175 pounds. Few hogs are held until they weigh 200 pounds or more, although the Los Angeles buyers take this kind readily.

"During the two days when the Denver market was checked up closely, there were 2,602 hogs received. Of this number only 2 carloads were uniformly good throughout. The best bunch that came in were well bred (grade Poland China) and exceptionally well finished. They brought $9.60. The bulk of the sales were at $9.35 to $9.50. Hogs of the class that most of the Project hogs belong to sold for around $9.35 with some of the lighter hogs (100 to 125 pounds) going at from $7.75 to $8.25. Yet many shipments from the Project have contained light hogs of this description, no better than those seen at the yards. While not familiar with the California markets, it is understood that there is more demand for, and less discrimination against, these light hogs.

"In comparison with the Chicago and St. Louis markets, Denver is receiving rather poor hogs--poor as to breeding and finish. Of the 2,600 watched through the Denver yards, approximately 200 were good enough to be classed as prime butchers on the Chicago market. These received much unusual attention and favorable comment at Denver and went at top prices.

"It is believed that the greatest evil in the marketing system in use is indiscriminate buying. The man with good hogs gets praise from the buyers but nothing else. All classes--the prime, good, common, and inferior grades of butcher hogs, packing hogs, and light hogs-- are bought from the farmers at practically the same price. Carload lots going out of the Project are nondescript mixtures. On the market the good hogs help sell the poor ones. If the lots from the different farms could be branded with paint, cut out at the yards, and sold separately by commission men, the man with good, well finished market hogs would get a pre-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

mium and his efforts would be rewarded. It is evident that this would be to the greatest advantage of a shipping association, as the profits made by the buyers are not excessive or unreasonable.

"There seems to be an opinion that hogs finished on the small grains will not dress out as well as those finished on corn. The true explanation of this theory is probably that the hogs come from the small grain sections with the large paunches caused by alfalfa grazing and feeding.

"At the present time it seems that the Los Angeles market is still the best for the Project, for, as nearly as can be estimated, hogs from the Project will bring 25 cents per hundredweight more on the California markets than on the Denver market, and almost a dollar more than on the Portland market.

"Shrinkage from Project points to Denver has been very high, being as great as 2,000 pounds to the car. This high shrinkage should be investigated and no cars should be shipped through without some reliable man, or one financially interested, in charge. To Los Angeles an experienced man is always in charge, which is not always true of the Denver shipments."

PHOTOGRAPHIC FILMS.

Roll films are not included in the contract schedule for the fiscal year 1917. As no advantage will be gained, therefore, in ordering such films from Washington, it is suggested that the field men may save time by securing them direct from local or nearby dealers.

Film packs remain on the schedule and a considerable saving may be made by ordering them through the Washington office.

FURNITURE.

Field men are again warned that their authorizations for the fiscal year 1917 will contain a clause specifically limiting their purchases of furniture, filing cases, etc., to articles under schedule. All requirements for material of this class should be referred to the Washington office.

MEAT SITUATION IN THE UNITED STATES.

Under the above title there will soon issue from the Office of the Secretary a series of 5 reports which should be of interest to all our field men. The scope of these 5 reports is indicated in the following explanatory statement which is given in each publication:

"In the winter of 1913-14 a committee of well-known investigators, familiar with agricultural conditions, was appointed by the Secretary of Agriculture to consider the economics of the meat situation. The committee was composed of Dr. B. T. Galloway, Assistant Secretary of Agriculture, as chairman; Dr. H. J. Waters, president of the Kansas State Agricultural College; Prof. C. F. Curtiss, Dean of the Iowa State College of Agriculture and Mechanic Arts and director of the Iowa Agricultural Experiment Station; H. W. Mumford, Professor of Animal Husbandry, University of Illinois; Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, U. S. Department of Agriculture; and Dr. T. N. Carver, director of the Rural Organization Service, U. S. Department of Agriculture. Mr. Leon M. Estabrook, Chief of the Bureau of Crop Statistics, was made secretary of the committee.

"No formal report was prepared by this committee, but, at the suggestion of the committee, independent inquiries dealing with several phases of the meat situation were undertaken by specialists of the U. S. Department of Agriculture. The results of these inquiries have been crystallized by the department in a series of five reports, under the general title of the "Meat Situation in the United States," each report complete within itself and bearing a separate number in the series of reports of the Office of the Secretary, as follows:

"Part I. Statistics of Live Stock, Meat Production and Comsumption, Prices, and International Trade for Many Countries. By George K. Holmes, Bureau of Crop Estimates. (Report No. 109.)

"Part II. Live Stock Production in the Eleven Far Western Range States. By Will C. Barnes and James T. Jardine, Branch of Grazing, Forest Service. (Report No. 110.)

"Part III. Methods and Cost of Growing Beef Cattle in the Corn Belt States. By J. S. Cotton and Morton O. Cooper, Office of Farm Management, and W. F. Ward and S. H. Ray, Animal Husbandry Division, Bureau of Animal Industry. (Report No. 111.)

"Part IV. Utilization and Efficiency of Available American Feed Stuffs. By W. F. Ward and S. H. Ray, Animal Husbandry Division, Bureau of Animal Industry. (Report No. 112.)

"Part V. Methods and Cost of Marketing Live Stock and Meats. By Louis D. Hall, F. M. Simpson, and S. W. Doty, Office of Markets and Rural Organization. (Report No. 113.)"

Meat Production in the United States (continued).

The farm superintendents of the Office of Western Irrigation Agriculture and the field men of the Office of Demonstrations on Reclamation Projects should receive copies of these publications in due course. If copies are not received within the next month or 6 weeks, the field men should notify the Washington office so that an effort can be made to secure these reports. The information is of much value to all of us in connection with the development of irrigation agriculture, as this development will usually involve meat production.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Huntley.

During the week ending July 8, the maximum temperature was 98; minimum temperature, 45; precipitation, .11 inch. The weather continued dry and unusually warm during the week.

Hauling of the first crop of alfalfa was completed. This crop was about 10 days later than usual. The hay was cured in excellent condition.

The grasses and wheat in field L-III, in the methods-of-planting pastures were given the second irrigation.

The Great Western Sugar Company have recently announced that an increase of fifty cents per ton in price of beets will be paid for this season's crop. On the basis of the 1915 sugar content of beets on the Project, this would mean a price of $6.65 per ton.

Irrigated Rotations.

The gains made by the fall pigs on alfalfa pasture during the past 10 days are shown in the following table:

No. of hog	Initial weight	Final weight	Gain	Av. daily gain	% daily gain
51	170	178	8	.8	.41
52	155	166	11	1.1	.69
53	158	169	11	1.1	.69
54	163	173	10	1.0	.61
55	159	166	7	.7	.46
Total	805	852	47	4.7	2.86
Average	161	170	9	.9	.57

Average daily return per acre.....$.64.

Huntley (continued).

On June 20 it was considered advisable to remove the sheep from the one-half acre pasture in field B-V. The 5 ewes and 5 lambs were placed in the feed lot for 10 days, and fed alfalfa hay to the amount of 60 pounds per day. The following table shows the gains made by the sheep in the feed lot.

Sheep No.	Initial weight	Final weight	Gain	Av. daily gain	% daily gain
Ewes					
66	118	127	9	.9	.74
68	141	147	6	.6	.41
70	118	124	6	.6	.52
72	160	162	2	.2	.09
74	113	121	8	.8	.69
Total	650	681	31	3.1	--
Average	130	136	6	.6	.49
Lambs					
67	94	95	1	.1	.09
69	84	87	3	.3	.27
71	88	92	4	.4	.27
73	111	110	-1	-.1	-.09
75	83	92	9	.9	.94
Total	460	476	16	1.6	--
Average	92	95	3	.3	.29

Yuma.

During the week ending July 1, the maximum temperature was 105; minimum temperature, 55; greatest daily range, 49. Twenty-five acres were irrigated.

Border A-13-4 was planted to various selections of grain sorghums. A portable stock rack for use in weighing cattle on the wagon scales was constructed.

Mr. S. H. Hastings, of the Sacaton station, visited the Yuma farm for two days during the week.

During the week ending July 8, the maximum temperature was 110; minimum temperature, 55; greatest daily range, 48. Forty-two acres were irrigated.

A new Osborne spring tooth harrow and a special John Deere sulky

Yuma (continued).

lister and planter were purchased and delivered this week. The planter is equipped with a two-planter box attachment, provided for following with a row on each side of the lister furrow. It is believed that this tool will plant cotton and other row crops in the bed method. As this method has already given encouraging results in cotton culture under irrigation, it is being tested with other row crops. Feterita on E-3&4 and dwarf milo on C-7 were planted in this way during the week.

Red wood posts have been purchased and woven wire has been furnished by the Reclamation Service for fencing the Government canal on the north line. This ditch will be pastured with sheep.

Early peach varieties in the deciduous orchard are ripening and some fruit is of very good quality. Varieties Honey, Pallas, and Red Ceylon are so far superior to other varieties that have ripened.

Alfalfa seed harvest on the Project began this week. The crop as a whole on the Project is very good. The quality of nearly all seed is excellent. Seeds are plump and up to date are of good color. If harvest and threshing can be completed without rain there will be little dark seed. Cleaned seed is now being contracted at from 15 to 16 cents per pound. The 1915 alfalfa seed crop on the Project amounted to about $250,000, and the value of the crop this year is now being estimated at $400,000. In nearly all fields the second cutting has been retained for seed, but it has developed that when the first cutting was taken off late much heavier sets of seed have been secured than where the seed crop came on early.

Mr. D. R. Shull arrived at the farm on July 1 to take the place made vacant by Mr. Ratliffe's transfer to Newell.

Hogs and steers on pasturing tests have made gains during the early periods of the tests as follows:

I T E M .	6 H O G S .		8 STEERS.
	1st period 6/20-6/27 (7 days)	2nd period 6/27-7/4 (7 days)	6/6-7/6 (30 days)
Initial weight.....	425.3	473	4884
Final weight.....	473	502	5725
Total gain.....	47.7	29	841
Av. daily gain.....	6.814	4.143	28.03
Per cent. daily gain...	1.53	.8535	.53
Av. gain per day per animal.....	1.12	.69	3.5
Pounds milo fed.....	59.5	66.5	0
Net returns per acre...	$10.98	$5.46	$12.61

Steers worth 6¢ per pound in Yuma on July 7. Hogs figured at 7¢ per pound. Milo figured at 1¢ per pound.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Truckee-Carson.

During the week ending July 8, several hog growers of the Project arranged to club together and market a car load of hogs in San Francisco about July 15. The weights of three of the largest bunches have been taken to determine the gains in weight and profits from feeding the hogs the last 15 days. The hogs will all be weighed before they are loaded and the percentage of shrinkage during the trip to market will be determined.

Considerable loss of cattle and sheep has been reported from different parts of this state from a disease known as Haemmorrahagic septicaemia. The post mortem conditions are similar in some respects to those of black leg and anthrax. This disease was diagnosed on June 28 at one of the farms after 5 head of cattle had died. On July 2, a representative of the University of Nevada was accompanied to the farm on which the outbreak occurred, for the purpose of vaccinating the remaining cattle against this disease. Twenty-one cattle were vaccinated and no further loss has been reported.

Huntley.

During the week ending July 8, 9 farm visits were made. A farmers' picnic at Ballantine was attended on the 4th.

One day was spent in Billings with Mr. Perce, Cheeseman of the Dairy Division, in the interest of the Ballantine cheese factory. A large portion of the cheese made by the factory in June has been sold at 17¢ per pound, which is expected to net the patrons at least 10¢ per pound above creamery prices for butter fat.

NOTES ON PRODUCTION IN SIX DAIRY HERDS.

Annual summaries recently received from Mr. Christopher show the milk and butter fat production of 47 cows which have been tested for a full year. These 47 cows are included in 6 herds, in which there are other cows not yet tested for a year. The breed, age, average test, milk and butter fat produced during 366 days, and the rank in the group of 47 cows are shown in the table on the following page. In the second column, the breed is indicated as follows: G.H., grade Holstein; G. J., grade Jersey; S.H.J., Shorthorn-Jersey; M, mixed; J.R.P., Jersey-Red Poll; G.S.H., grade Shorthorn; R.P., Red Poll; and G.G., grade Guernsey.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley (continued).

Cow No.	B Breed.	Age, Years.	Average test.	Pounds milk.	Pounds Butter-fat.	Rank.
1	G.H.	8	4.28	9329	399	1
10	G.H.	8	3.64	10337	376	2
11	G.J.	6	3.98	9203	368	3
2	G.H.	5	4.09	8491	347	4
9	G.H.	8	3.40	9710	331	5
49	G.H.	8	3.63	8786	320	6
4	G.H.	10	4.71	6758	319	7
3	G.H.	8	3.75	8428	317	8
12	G.H.	4	4.24	7466	317	9
77	G.H.	6	3.11	9641	300	10
46	G.H.	6	3.45	8501	293	11
13	G.J.	5	4.35	6540	285	12
14	G.H.	5	4.05	6616	271	13
6	G.H.	5	4.09	6590	270	14
47	S.H.J.	8	4.00	6647	269	15
76	M.	3	5.00	5346	268	16
24	G.H.	5	4.28	5756	246	17
32	G.H.	5	4.28	5756	246	18
89	G.J.	?	5.08	4801	244	19
39	S.H.J.	5	4.55	5214	238	20
16	G.J.	4	4.82	4885	235	21
40	G.H.	5	3.60	6504	235	22
15	G.J.	4	3.89	5978	233	23
5	G.H.	5	3.36	6875	231	24
17	G.H.	3	4.13	5515	228	25
25	G.J.	5	6.43	3491	225	26
86	J.R.P.	?	4.18	5273	221	27
87	G.S.H.	?	4.45	4825	215	28
23	G.J.	5	4.62	4622	214	29
26	G.J.	5	4.89	4303	211	30
48	G.J.	5	4.19	4965	208	31
75	G.H.	6	3.87	5357	208	32
90	G.J.	?	4.11	4990	205	33
27	G.J.	5	5.36	3701	198	34
88	R.P.	?	4.39	4411	194	35
78	G.J.	3	3.97	4721	188	36
41	S.H.J.	11	3.55	5304	184	37
29	M.	7	3.56	5000	178	38
21	G.J.	3	4.43	3947	175	39
28	G.J.	6	3.76	4664	175	40
20	G.H.	5	3.61	4798	174	41
22	G.J.	3	4.78	3607	173	42
45	H.J.	6	3.63	4139	150	43
43	G.J.	11	4.01	3654	147	44
44	S.H.J.	4	3.45	3930	136	45
42	G.G.	3	4.72	2757	120	46
91	G.J.	?	5.02	1546	78	47
Average			4.08	5832.9	237.5	

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley (continued).

The following points are shown in the table: The average test varied from 3.11 to 6.43 per cent, the mean being 4.08 per cent.; milk production ranged from 1546 to 10,337 pounds, averaging 5822.9 pounds; and butter fat production ranged from 78 to 399 pounds, averaging 237.5 pounds. Of the 47 cows, 10 produced as much as 300 pounds of butter fat during the year; 16 produced as much as 250 pounds; 33 as much as 200 pounds, and 43 as much as 150 pounds.

Several of the owners of these herds sell their cream sweet to special markets-- hotels and ice cream factories-- so that the average price received for butter fat was high--33.9 cents a pound. The value of the butter fat produced ranged from $21 to $156 per cow, the average being $80.60.

The estimated cost of feed was very low, as these farmers made much use of pasture on vacant farm units, roadsides, uncultivated fields, etc., and valued such pasture at about $1 a month per cow. Alfalfa hay was valued at $5 a ton. The feed cost as estimated averaged $24.70, ranging from $15.98 to $34.00.

Minidoka.

During the week ending July 8, complaints and requests for information in regard to bloat were very numerous. In one herd of 8 cows, 7 bloated in one afternoon. Two were lost. It was necessary to stick 3 of the others. The herd was in a pasture of mixed grasses although there is considerable volunteer alfalfa and clover in this field. Another farmer lost 3 cows from bloat on alfalfa pasture the same afternoon. Both herds had been kept on those particular pastures for some time previously without trouble.

The Cooperative Creamery Association at Rupert is now working on a cooperative cream shipping plan, using the old creamery as a receiving station. However, they are not receiving all the cream shipped from Rupert as the other stations are still maintained. A circular letter to all the cream producers in the district was mailed by the secretary this week.

There has been a falling off in the demand for cheese of late, the Acequia Factory now having 8000 pounds on hand with no orders. As the weather is now very warm there is considerable difficulty with gassy milk.

The Amalgamated Sugar Company announces a raise of 50 cents per ton for this year's crop of beets. They had been contracted for at $5.25 per ton. Meetings were held at the North Side towns this week to discuss the possibility of a factory for the North Side. This will be built provided contracts for 4000 acres can be made for 1917. Half this acreage has already been secured. The factory will be located between Rupert and Paul.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

NOTES ON SHEEP.

The following notes regarding sheep are taken from Mr. Rinehart's report of a trip he made to points in Utah, Colorado, and Wyoming during the month of June:

"Conditions and different phases of the sheep industry were investigated in Salt Lake City, Utah; Fort Collins, Colorado; and Laramie, Wyoming. Throughout these sections there is but very little attention given to raising sheep on the farm, and there are but very few data on this problem. However, there is no reason why it would not be profitable, although there seems to be the opinion that the farm flocks can not compete with the range bands. Dr. McClure, Secretary of the National Wool Growers' Association, is not of this opinion, however, and believes that there is a great opportunity for sheep on the irrigated farm. Many Minidoka Project farmers are demonstrating the correctness of this theory. Owing to the present status of the industry, the limitations of the range, and the question of supply and demand, it is evident that the problem of sheep on the irrigated farm is not a question of competition with the range men, but, if this enters at all, with the farmers of the East and the Middle West.

"At this time of year it is impossible to discover any advantage which the Fort Collins district has over the Minidoka Project as a region for fattening lambs. There seems to be no particular difference except that Fort Collins is nearer the corn belt and can buy corn at reasonable prices. Corn is the favorite grain for fattening lambs in that section. However, the results secured at the Caldwell Farm, in Idaho, show that this is not particularly better than the Idaho grains. Both places have a climate such that no winter shelter is necessary. It is believed that the difference is due largely to the fact that the first attempts in the Fort Collins district were profitable while those on the Minidoka were not. Yet, when it is remembered that it has taken 27 years to build up the industry to its present status in the Fort Collins district, it will be seen that too much should not be expected of the inexperienced Project farmers in so short a time.

"This year, in the Fort Collins district, as high as 7½ cents has been paid for contract lambs for fall delivery. Reports that as high as 8 cents had been paid could not be verified, although it seems not improbable owing to the shortage of the lamb crop generally and the demand for sheep and lambs. At such prices it is very doubtful whether it is advisable to attempt demonstrations of this kind on the Minidoka, as the chances for loss are too great. However, it is now possible for reliable farmers to secure money for this purpose."

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton.

One day of the week ending July 8 was spent in the office working on dairy records, some of which have now completed their 12th month. Twenty farms were visited during the week, and three farmers called at the office.

The grasshopper nuisance seems to have been removed by the heavy rainstorm the first of the week. A half-inch of water fell during the 12 hours of heaviest storm on the upper part of the Project, including the area infested by the grasshoppers. A careful survey of the fields on Friday, as well as examinations made by the farmers prior to that day, failed to locate any but a very few of the millions of hoppers which were present last week. Most of the hoppers that were found are in small areas a few feet in diameter, and they seem to be a smaller brood than those present before the rain.

The market prices of butter fat have remained unchanged during the last two months. The local market is offering $7.75 per cwt. for prime hogs, but the bulk of sales is between $7.25 and $7.50. The old potatoes are cleaning up at about $20 per ton.

North Platte.

Most of the week ending July 1 was spent in the field doing general field work, visiting 36 farmers, answering 22 calls and helping some of the pig club boys with their work.

The Scottsbluff County Fair Association has agreed to offer the following cash prizes to the members of the pig club at the County Fair in September. These prizes call for $21.50 more than last year's prizes. In getting up this list, an effort was made to arrange the prizes so that every boy could win at least one prize.

Best pure bred sow pig:
$8.00: $5.00: $3.00: $2.00: $1.00.
Best pure bred male pig:
$8.00: $5.00: $3.00: $2.00: $1.00.
Best grade pig:
$8.00: $5.00: $3.00: $2.00: $1.00.
Best group of three pigs, pure bred or grades:
$8.00: $5.00: $3.00: $2.00: $1.00.

On Saturday, a case of hog cholera was found in the herd of Mr. Volk, at Bayard, and the herd was vaccinated on Sunday. About one-third of the herd was too far gone to vaccinate. The disease was carried from a nearby farm where cholera occurred some time ago.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte(continued).

A greater part of the week ending July 8 was spent in the field answering 14 calls, visiting 27 farms, and doing general work.

Calls were received from 2 farms on which some of the pigs were affected with a trouble similar to partial paralysis in older hogs. The pigs affected were about 3½ months old. On both farms they were receiving a ration of corn and alfalfa pasture and appeared to be in a very healthy condition aside from the trouble mentioned. In one herd of 40 pigs about 15 were affected, none of them especially bad, but they would wabble around on their hind legs when walking. It seemed to affect all 15 pigs in this herd about the same time. After a few days they appeared to grow better. In the other herd, which was about 40 miles from the first, 2 pigs first showed the trouble by loosing control of their hind parts. Later they became worse and could not walk on their hind legs. About this time others in the herd of about 90 pigs showed the same trouble, and when the visit to the farm was made about 10 pigs were affected. The trouble was not diagnosed, but an effort will be made to find out what the trouble is.

Corn is now selling for about $1.36 per cwt. on the Project, which is somewhat lower than it was last year at this time.

A carload of shoats, averaging 77 pounds, was shipped to the State Serum Plant during the week by the Farmers' Union Store at Morrill. The price paid was 10¢ per pound and they were hard to get at that price.

During the week ending July 15, visits were made to 22 farms and 14 requests for services were received.

A visit was made to the farm of Mr. Mulligan, of Henry, one of the largest hog raisers on the Project. During the spring of 1916, 86 young gilts on this farm have raised 510 pigs, an average of approximately 6 pigs per sow. This farmer now has 130 acres of corn, which is by far the best that has been seen on the Project, and 40 acres of beardless barley that he will use for hog feed. One sow in the herd farrowed and raised 20 pigs last year, in one litter. This spring the same sow farrowed 14 live pigs and raised 13 of them.

Recently a visit was made to the farm of Mr. Dunham, near Bayard, who last year sowed a considerable acreage of sweet clover for cow pasture. This spring he lost several cows from bloat, and he is now using the sweet clover for hay.

ITINERARY REPORTS.

Field men are requested to see that in all cases their itinerary reports conincide with items in their reimbursement accounts as re-

Itinerary Reports (continued).

gards points visited. For instance, in many cases the itinerary report shows a visit to a certain neighborhood, while the account shows an item of expense at a point within the neighborhood. The auditors, not being familiar with the ground, assume that the neighborhood named is a town and question the item of expense at another town. It would be better in cases of this kind to show on the itinerary reports: "Washington and vicinity."

LIVE STOCK,
Exchange of.

Paragraph 62 of the Property Regulations of the Department (just issued and effective July 1, 1916) reads as follows:

> 62. Animals and Animal Products.- Such animals and animal products as cease to be needed in the work of the department may be sold in the open market or exchanged for other live stock, and all moneys received from the sale of such animals or animal products or as a bonus in the exchange of the same shall be deposited in the Treasury as miscellaneous receipts. Animals or animal products required by these regulations to be accounted for as nonexpendable property when sold or exchanged shall be dropped from the property return. Live stock secured in exchange, if classified as nonexpendable property shall be taken up on property returns.

Under this authority live stock, used for experimental purposes, which has served its purpose, may be exchanged for younger stock for continuation of the experiment. This exchange should be made by a board of survey in the same way as a straight sale and a check covering any boot received transmitted with the report.

Copies of the new Property Regulations will be sent to field men as soon as they can be secured.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Truckee-Carson.

During the week ending July 8, the maximum temperature was 100; minimum temperature, 40. During the week ending July 15, the maximum temperature was 100; minimum temperature, 48.

During this two-week period all the fields on the farm were irrigated. A machine shed was constructed similar to the old one, 60 ft. by 16 ft. This shed includes a garage and work room at one end.

Very satisfactory gains have been made by the pigs, in both lots I and II. In lot I, the daily net return per acre was $1.32, and in lot II, 88 cents. Details are given in the following table:

Results of Pasture Experiments with Alfalfa.

I T E M .	Pigs on alfalfa pasture. Area .25 acre. Period-July 1 to 15: 14 days L o t I.	Pigs on alfalfa pasture. Area .53 acre. Period-July 1 to 15: 14 days L o t II.
Number of pigs.....	10	17
Initial weight, pounds.....	566	984
Final weight, pounds.....	668	1137
Total gain, pounds.....	102	153
Daily gain, pounds.....	7.3	10.9
Daily gain, per cent.....	1.19	1.05
Barley fed, pounds.....	167	283
Cost of barley @ 1½¢.....	$2.51	$4.23
Value of gains @ 7¢.....	$7.14	$10.71
Net return.....	$4.63	$6.48
Net return per acre.....	$18.52	$12.23
Daily net return per acre.....	$1.32	$.88

Belle Fourche.

During the week ending July 15, the maximum temperature was 98; minimum temperature, 57; precipitation, .71 inch. Warm weather prevailed during the entire week. On the 10th, .71 inch rain fell. This

Belle Fourche (continued).

relieved the drought to some extent and aided the dry land crops materially. It also moistened the surface of the beet and potato plats so that it will not be necessary to irrigate these plats immediately.

Irrigation of the grain and alfalfa in the rotations was finished early in the week. All of the larger fields of alfalfa on the farm were irrigated later in the week.

All of the beets, corn, and potatoes in the irrigated rotations and in the fall irrigation were hoed. The corn in fields A and B was thinned and part of the corn in field D was hoed and thinned.

Mr. George T. Ratliffe arrived on the 14th from Yuma, Arizona, to take charge of the irrigated rotations.

Six ewes and six lambs were turned on alfalfa on plat A II-36 on June 10. The pasture ran short about June 21, and all of the sheep were removed. Three ewes and three lambs were returned to the plat on July 3. The gains made during the two periods that the sheep were pastured on this plat are as follows:

Dates	No. of days	No. of sheep	Initial weight	Final weight	Gain from 1/4-acre, Lbs.
6/10-6/21	11	12	731.0	760.5	29.5
7/3-7/13	10	6	387.5	405.0	17.5
Totals....	21	-	-	-	47.0

San Antonio.

During the week ending July 15, the maximum temperature was 97; minimum temperature, 68; greatest daily range, 27. The weather continued warm throughout the week with very little wind movement. Due to the recent rains and cloudy weather, the humidity was appreciably greater than is common at this season. Light showers occurred on several days; the total precipitation, however, was only .43 inch. The condition of trees and lawns has improved greatly since the rain of last week. The Bermuda grass lawn looks much better than usual during July.

Cultivation of orchards was completed and fallow areas were disked. Plats A6-11 and A6-15 were plowed and subsoiled. Oat stubble on field C5 was plowed. Oat selections made in 1912 were planted in 1/10-acre plats on this area, but failed to make any seed

San Antonio (continued).

whatever. Remnants of last year's seed were saved, so that, even though a year's time has been lost, it is still possible to complete the test of the various selections. All milo on the rotation plats was cut on Tuesday. Sorghum cut last week was shocked. Cotton on field C5 was weeded and some weeding was done on the rotation plats.

Mr. G. B. Gilbert arrived at the station on July 9, and will spend several weeks here engaged in cotton work.

Belle Fourche.

During the week ending July 22, the maximum temperature was 95; minimum temperature, 53; precipitation, .17 inch.

The warm, dry weather of the week has caused crops to mature rapidly. Dry land oats and barley have been harvested. The oats and winter wheat on irrigated land have commenced to ripen.

The old alfalfa and a few fall seeded alfalfa plats in the rotations were irrigated on the 17th and 18th.

On the 22nd, the annual Farmers' Picnic was held at the Experiment Farm. This was the second picnic of its kind held here and was a pronounced success. At least 800 people visited the farm, listened to the speeches, and witnessed or participated in the entertainment. The speakers were Prof. C. Larson, head of the Dairy Department of the South Dakota State College; Mr. Ben. Lawshe, of the "Dakota Farmer"; and Mr. Hans Mendelsohn, of the Great Western Sugar Company. The entertainment consisted of a ball game, some "bronco busting" in the afternoon, and a dance in the loft of the new barn in the evening.

Mr. Scofield arrived at the farm on the 21st.

The weights of the sheep in the alfalfa pasturing experiment on Plat A II-36, for the third period, are as follows:

Date	No. days	No. sheep	Initial weight	Final weight	Gain
7/14-7/24	11	6	405	413	8

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Boise.

During the week ending July 8, a trip was made to the Owyhee range country.

The trip, which was to the South Mountain Range in Owyhee County, was made upon request of a number of ranch owners in that district who are interested in making arrangements with Project farmers to have their stock wintered in the Boise or Snake River valleys. Winter range is uncertain and likely to be rendered useless by heavy snow and even such hay as can be secured at all is very scarce. Sometimes men who have hay are unable to feed it on account of the snow. As a result of existing conditions cattle are often lost during the winter and those that live are turned upon the range in the early spring, before the grass is sufficiently grown to furnish more than the scantiest feed, in such weakened condition that many die. A number of men to whom the matter was presented seemed to think that it would be desirable to have the cattle better fed throught the winter, but the distance from the range to the irrigated valleys was generally given as a serious obstacle to such a plan. Some of the Project farmers have expressed themselves as being very much in favor of securing outside stock to which to feed their rough feeds but it is uncertain at this time whether any satisfactory agreement can be arrived at.

The condition on the Owyhee range with respect to the quality and amount of feed available is rather disappointing. There is no question that the range has been very seriously injured by sheep, not only for cattle but for the sheep themselves. The difference between the open range where sheep are run and the protected range within fences or within the two-mile limit is very noticeable and presents very strongly the need of some method of control that will work for the conservation of the grazing resources.

During the week ending July 15, preliminary weights were made on two bunches of hogs; one bunch is being carried on pasture alone, and the other herd is to be put on full feed after having been carried on pasture with a small amount of grain. The first bunch will be put on feed as soon as grain is threshed.

Part of one day was spent with Mr. Monlux, near Boise, who is building a concrete silo. This is the first silo to be put up on the Boise Project this season, but there will be a good number erected. One is to be started on the farm of the Avalon Orchard Company, at Kuna, next week.

The third month of the local cow testing association has just

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

been completed. Production has fallen off considerably with advanced lactation, hot weather and flies, although the showing for the month is still quite creditable. Forty-seven cows produced 40 pounds, or above, of fat for the month, and 11 herds made averages of 30 pounds or more. About 460 cows were on test, the average for the entire association being about 28 pounds of fat.

Several cases of blackleg have been reported recently, and over 200 doses of vaccine have been distributed during the week.

Tieton.

During the week ending July 15, 21 farm visits were made, 3 office conferences were had with farmers, and 2 calls were answered by farm visits. Two farms were visited in regard to their dairy records. Silos and silage were discussed with farmers on 3 visits.

Field work has not been pressing during the past week, for farmers have been busy putting up the last of the first cutting of hay and cultivating crops after the rains. All crops, especially corn, made a very satisfactory growth during the last ten days.

One day was spent with Mr. Newhouse, County Club leader for the boys' and girls' clubs. Eight corn and pig club members were visited, their reports discussed, the pigs inspected and suggestions made, the corn fields visited and discussed, and the future work outlined.

The only noticeable change in the local farm produce markets was the rise in the price of prime hogs from $7.50 last week to $8.50 during the latter part of this week. One Project farmer, Mr. Yates, is now buying "feeder" stuff at about $6.00, feeding cracked wheat costing about $1.00 per cwt. as a supplement to alfalfa pasture, and feeding to a weight of about 200 pounds. Figures will be obtained as lots are marketed.

This is the first week since live stock has been on alfalfa pasture this spring that no losses from bloat have been reported. The weather has been cloudy, warm and bright, and rainy in spells, and the stock have been fed on all grades of alfalfa pasture and of newly made hay.

Uncompahgre.

During the week ending July 15, there have been 13 requests for services, and 14 farm visits were made.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

The grazing association proposition has been talked during the week to several farmers who are interested in it. One problem that confronts the establishment of an association on this Project is the fact that there are a number of cow men who make it a practice to take care of stock on the range. In the spring they gather up from the small farmer the number of stock he has to send to the range and look after them during the season for $1.00 to $1.50 per head.

The local creamery is doing better work during the present time than it has ever done since it was started. The trade has picked up a great deal due to their system of cream grading and making butter from only the best cream. During the week they have sold 2000 pounds of butter. The price paid for butterfat has advanced to 26¢, which is 1¢ lower than the price on the eastern slope of the State. The farmers are taking readily to the grading system and are sending in a much better quality of cream. The creamery reports a sale of 2000 gallons of ice cream during the month of July so far.

On Saturday the annual Grange picnic was held at Montrose with a large attendance. A talk was given at that time on the live stock work of the Project. The principal speaker was Mr. Wilson, the National Master of the Grange.

Huntley.

During the week ending July 15, 15 farm visits were made. Mr. Scofield spent the greater part of the week on the Project.

The Ballantine cheese factory received 45,007 pounds of milk from June 7 to July 1, for which the patrons were paid 39¢ per pound butter fat. This is 13¢ per pound more than the creameries offered during the same period for butter fat in sour cream. The Billings creamery is now offering 45¢ per pound butter fat in sweet cream.

5 August, 1916.

SWINE AND CATTLE POPULATIONS ON RECLAMATION PROJECTS IN 1915.

The total swine population of the 23 reclamation projects now in operation increased 36 per cent in 1915 and the total number of cattle increased 28 per cent, according to figures compiled from the statistical reports of the Reclamation Service and shown in the following table:

Project	Hogs			All Cattle			Dairy Cattle		
	1914	1915	% Increase	1914	1915	% Increase	1914	1915	% Increase
Belle Fourche	11,988	14,798	23	4,092	7,724	89	1578	2200	39
Boise	25,095	25,286	8	5,901	7,765	32	5150	6768	31
Carlsbad	589	2,151	265	462	4,320	835	--	639	--
Flathead	3,196	1,803	- 44	777	827	6	--	--	--
Hondo	200	208	4	390	557	43	--	--	--
Huntley	4,612	4,866	5	2,921	3,316	14	922	1507	63
Klamath	6,542	7,546	15	4,660	4,171	- 10	--	--	--
Lower Yellowst.	3,333	4,138	24	1,574	2,343	49	--	--	--
Milk River	1,003	1,940	93	454	873	92	--	--	--
Minidoka	29,819	43,933	47	6,544	8,179	25	--	--	--
North Platte	22,143	24,928	13	3,190	6,941	118	1521	2218	46
Okanogan	540	672	24	459	691	51	--	--	--
Orland	2,400	4,047	61	2,904	4,142	43	2549	3257	27
Rio Grande	4,189	6,096	45	1,740	2,459	41	--	--	--
Salt River	17,408	34,168	96	49,626	55,144	11	24202	31360	30
Shoshone	4,679	5,767	23	2,163	2,447	13	--	702	--
Sun River*	3,215	2,843	- 12	786	931	18	--	556	--
Sunnyside	23,948	32,654	36	8,967	11,098	24	--	--	--
Tieton	4,990	5,473	10	1,425	2,312	62	--	--	--
Truckee-Carson	3,815	4,836	27	6,043	8,390	39	1503	2433	62
Umatilla	2,185	1,862	- 15	641	765	19	--	--	--
Uncompahgre	4,941	10,882	120	5,719	7,611	33	--	2317	--
Yuma	4,982	12,500	151	4,894	5,695	16	2851	3446	21
23 Projects	185,812	253,397	36	116,332	148,701	28	--	--	--

*Fort Shaw unit only.

Although the market conditions during the early part of 1915 had a depressing effect on the swine industry generally, it is shown in the table that the total swine population of the projects increased substantially during the year. The population increased from 185,812 to 253,397 head, or about 36 per cent. These projects contain about 18,000 farms, so that at the close of 1915 the swine population averaged about 14 head per farm, as compared with 10 head per farm a year earlier. There were increases on all but 3 of the projects, where there were decreases as follows: Flathead, 44 per cent; Sun River, 12 per cent, and Umatilla, 15 per cent.

5 August, 1916.

Swine and Cattle Populations (continued)

In number of hogs on farms at the close of 1915, the Minidoka led, with 43,933 head. It was followed by the Salt River, with 34,168 head; the Sunnyside with 32,654 head; the Boise, with 25,286 and the North Platte, with 24,928. Only these 5 projects had as many as 20,000 hogs each at the close of 1915.

In percentage increase, the Carlsbad led, with 265 per cent. It was followed by the Yuma, with 151 per cent; the Uncompahgre, with 120 per cent; the Salt River, with 96 per cent, and the Milk River with 93 per cent. On ten of the 23 projects, the swine population increased 25 per cent or more. The changes in the swine population on the different projects were such as to indicate that the swine industry on these projects is far from being stabilized.

On 15 of the 23 projects dairy cattle and beef cattle were not enumerated separately. The number of all cattle on farms at the close of 1914 on all 23 projects was 116,332 head, as compared with 148,701 head at the close of 1915. The increase during the year 1915 amounted to 32,369 head, or about 28 per cent of the 1914 population. The average number of all cattle per farm at the close of 1915 was about 8 head, as compared with 6 head at the close of 1914.

In number of cattle at the close of 1915, the Salt River led, with 55,144, or about 37 per cent of the total cattle population of the 23 projects. The projects next in importance in cattle population are the Sunnyside, with 11,098; the Truckee-Carson, with 8,390; the Minidoka, with 8,179; the Boise, with 7,765; the Belle Fourche, with 7,724; the Uncompahgre, with 7,611; the North Platte, with 6,941; and the Yuma, with 5,695. Of the remaining 13 projects, only 3 had as many as 4,000 cattle each at the close of the year.

The cattle population increased during 1915 on all the projects but the Klamath where there was a decrease of about 10 per cent. The largest percentage of increase , 835 per cent, was on the Carlsbad. It is possible that the census at the close of 1915 on that project included feeder cattle, which ordinarily are not included. Other projects having comparatively large percentage increases are the North Platte, 118 per cent; the Milk River, 92 per cent; and the Belle Fourche, 89 per cent. The cattle population increased 33 per cent or more on 12 of the 23 projects.

It is probable that the increases in catt;e population during the year were due chiefly to increases in dairy stock. On the Belle Fourche, Carlsbad and North Platte projects, however, the increases are known to be due chiefly to increased beef cattle. Of the 8 projects on which dairy cattle and beef cattle were enumarated separately, the Huntley showed the largest percentage of increase, 63 per cent. It was followed by the Truckee-Carson, with 62 per cent.

5 August, 1916.

TRANSPORTATION REQUESTS.

Field men are reminded to send in promptly all unused transportation requests issued under authorizations for the fiscal year 1916.

TELEGRAMS.

The attention of field men is called to Par. 44 of the Fiscal Regulations, designating proper addresses for telegrams to Washington. In addition to "Plant Bureau", the surname of the employee for whom the message is intended may be used, and in cases where the use of the surname alone may result in confusion the initials should also be added. For this office the names "Scofield", "Farrell", or "Wood" will be sufficient.

In this connection it is requested that replies to telegrams from this office be made very promptly. The telegraph is used only in case of necessity and when embodying an inquiry should be taken as evidence of the need for prompt reply.

WESTERN IRRIGATION AGRICULTURE

FIELD NOTES.

Yuma.

During the week ending July 15, temperatures as follows were recorded: maximum 105, minimum 55, and greatest daily range 49. Twenty-six acres were irrigated.

There occurred on June 13 a hard rain which amount to only 0.46 inch at the experiment farm, but in the hills toward Picacho, Cal. there was a heavy downpour which brought a flood down Picacho wash, and took out the siphon canal at that point and covered about 500 acres of Indian land. A part of this land is leased by white farmers and some crops were lost, mostly grain sorghums. This land is low and the water must seep and evaporate away. The canal was repaired within a few days before any water shortage was suffered on the Arizona side of the project.

All row crops were cultivated. Alfalfa seed crops were harvested from borders C-41 and D-20. The fourth cutting of hay was taken from alfalfa varieties on C-23

5 August, 1916.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued)

During the week ending July 23, the following temperatures occurred: maximum 105, minimum 55, and greatest daily range 45. Twenty-three acres were irrigated.

Fields A-12-2 and C-36 were plowed. Sudan grass hay was harvested from borders B-1 to 4, 11 to 16 and E-5 and 6. The next crop of this grass will be turned under for green manure.

The first harvest of Castor oil beans was made from B-21. A great deal of difficulty is found in harvesting these beans as the pods crack open even before dry and the spikes are very uneven in maturing.

Scottsbluff.

During the week ending July 22, the alfalfa hay was cut and put up. Most of the men were kept busy at this, and when we had any men to spare they were put to irrigating. On account of the extremely dry weather the crops require almost constant attention in the way of irrigation and cultivation.

In 1915 seven different strains and varieties of alfalfa seeds were seeded in duplicate 1/10 acre plats. The average yield of hay per plat was as follows: Black Hills seed, 358 pounds, Kansas seed, 336 pounds, Canadian, 328 pounds, Baltic, 392 pounds, Grimm, 383 pounds, Turkestan, 316 pounds and Native, 286 pounds.

Native alfalfa has also been grown in duplicate 1/10 acre plats using different cultural methods on the various plats. Two plats were spring-toothed in the spring. These plats yielded an average of 534 pounds of hay per plat. Two plats that were disked, yielded an average of 245 pounds per plat. The manured plats yielded 762 pounds per plat. The plants receiving no culture whatever yielded an average of 445 pounds. The disked plats appeared to suffer more than any other plats from the cultural work. The disking was done by setting the disks as straight as possible, resulting in the least damage, but it is impossible to use a disk harrow on alfalfa and not destroy some of the plants and crowns, thus thinning out the stand to a large extent.

5 August, 1916.

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Huntley.

During the week ending July 22, the maximum temperature was 95, minimum 45, and precipitation 0.02 inch.

The weather continues hot and dry, and so far during the season an unusually large amount of irrigation has been necessary. Crops are making rapid growth and, although backward earlier in the season, are now about as far advanced as they ordinarily are at this season of the year.

The Huntley Project Pioneer's Picnic was held at the Experiment Farm, on July 22. About two thousand people were in attendance. The principal speakers were Chancellor E. C. Elliott, of the State University, Director F. B. Linfield and Prof. Parker, of the Montana Experiment Station.

In the irrigated rotations, sugar beets, corn, potatoes, and spring seeded alfalfa plats were irrigated for the first time. A second irrigation was given the wheat and oats plats. Old alfalfa was irrigated for the fourth time.

The wheat and oats on plats K-V-17-18-21 and 23, rotations 1, 3 and 28, were cut with a mower, hauled off and burned. These plats were badly infested with wild oats. Because of this condition it has been thought advisable to harvest the grain in the above manner and by disking and early plowing this fall to eradicate a large proportion of the wild oats.

On July 15, the fall pigs on alfalfa pasture in rotation 67 were taken off the plat and placed in the feed lot. On the same date, eight spring shoats, having a total weight of 356 pounds, were placed on the plat.

The gains made by the fall pigs for the entire spring period on the alfalfa pasture are shown in the following table:

Pasturing alfalfa - Spring period - Rotation 67.

Hog No.	Sex	Pasture Period	No. of days	Initial weight	Final weight	Gain for period	Average daily gain	Per cent daily gain
51	Barrow	5/1-7/15	75	110	194	84	1.12	.75
52	Gilt	"	75	100	179	79	1.05	.77
53	"	"	75	101	181	80	1.07	.77
54	"	"	75	110	189	79	1.05	.73
55	"	"	75	103	186	83	1.11	.78
Total				524	929	405	5.40	
Av.				105	186	81	1.08	.76

Pounds of grain fed.....1054.3 Net return per acre.....$71.24
Pound of grain per pound of gain.....2.60

5 August, 1916.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued)

The following table shows the gains made by the 5 ewes and 5 lambs on pasture grasses in field B-V during the past ten days.

Sheep Numbers	Initial Weight	Final Weight	Gain
	EWES		
66	121	120	-1
68	145	140	-5
70	122	120	-2
72	151	151	0
74	117	119	2
Total	656	650	-6
Average	131	130	-1.2
	LAMBS		
67	97	97	0
69	90	90	0
71	98	98	0
73	114	117	3
75	93	93	0
Total	492	495	3
Average	98	99	.06

San Antonio.

The maximum temperature for the week ending July 22, was 100, minimum 70, and greatest daily range 28. The total precipitation was 1.69 inches.

Part of field B4 was plowed. Cotton and part of the orchards were cultivated. Cutting of scattering patches of Johnson grass in the corn plats in the rotation experiments was completed. Some of the time during wet weather was utilized in rearrangement of water pipes in the office building.

Since the recent rains, cotton has made much growth. Very few flowers are appearing, however, as most of the squares are dropping off before the buds open. Boll weevil seem rather numerous

5 August, 1916.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

San Antonio (continued)

now and will probably prevent the development of many bolls in addition to those already on the plants. Conditions during the past three weeks have been very favorable for the reproduction and development of boll weevils.

DEMONSTRATIONS ON RECLAMATION PROJECTS

FIELD NOTES

Uncompahgre.

Sixteen farms were visited during the week ending July 22, and six requests for services and information were attended to. A part of the week was spent in connection with the work of the pig clubs.

The western slope fair association has been busy making up the guarantee for this year's fair. The interest among the live stock men is good and a strong fair is assured.

The Loesch Bros., breeders of pure bred Holsteins, have been conducting advanced registry work on a part of their herd during the week. Four of their cows have made the required record. One of the animals promises to make 24 pounds of butter in the seven days.

A hog feeding test was started on a herd of 41 Duroc-Jersey pigs. The pigs are 113 days old and weigh an average of 86 pounds. They are to run 77 days on alfalfa pasture and a ration of ground barley.

Grain has been cut on many of the farms and some threshing is being done to secure feed for hogs. The barley crop, though limited inacreage, is very good and is ready to thresh. It is encouraging to note that the grain is being threshed at this time as it insures the hog growers feed for the pigs to be marketed early in the fall.

5 August, 1916.

DEMONSTRATIONS ON RECLAMATION PROJECTS
Field Notes.

Uncompahgre (continued)

The cows recently imported from Wisconsin are doing very well considering the long hard trip they had to take. One of the heifers with her first calf which was dropped en route is producing 35 pounds of milk a day.

Butterfat is 26¢ at present.

North Platte.

During the week ending July 22, the shoats in Brown and Hinkle's feeding test were weighed up, thus ending the first period of the test. In this test 158 shoats and 7 sows are receiving a ration of corn in self-feeder, ground wheat, hand fed and alfalfa pasture. The test will be continued as before except that the sows will not be included. A test was started on Mr. E. Brown's farm in which 55 shoats will receive a ration of corn in self-feeder and alfalfa pasture.

During the twelve months ending June 30, 1916, 512 cars of hogs were shipped from the valley. This is an increase of 186½ cars over the preceding year. The per cent of increase is 57.3. The total receipts during the past year were, $724,824.00, as compared with $421,238, the previous year. During the first 6 months of 1916, 302 cars of hogs were shipped from the valley, an increase of 112 cars, 59.5 per cent over the first 6 months of 1915. The total receipts for the first 6 months of 1916 were $467,370 as compared with $240,400 for the first half of 1915. The largest shipment for any one month was 63 cars in February 1916. The largest receipts for any one month was $92,332.00 in April, 1916.

On Friday a trip was made to the farm of Mr. Wells, which will come under the new south-side ditch that is being built. While doing dry farming, Mr. Wells is raising quite a large number of hogs, using alfalfa pasture, corn, wheat, and speft for feed. It appears that he has been successful. Last fall and winter he hogged down about a hundred acres of dry land corn and is well pleased with results. He expects to do considerable dairying in the future, and he expressed his intention of shipping in a car load of grade Holstein heifers this fall.

5 August, 1916.

DEMONSTRATIONS ON RECLAMATION PROJECTS
Field Notes.

Huntley.

Eleven farm visits were made during the week ending July 22. About two days were spent in the office.

A very successful project picnic was held at the Experiment Farm on Saturday. About two thousand were in attendance and an excellent program of speaking and athletic sports was carried out. A great deal of interest was manifested by many farmers in the work of the experiment farm which was explained by Mr. Hansen.

Shoshone.

During the week ending July 15, 13 farms were visited, 25 cows were tested in 2 herds and one meeting was attended.

A farmer who has alfalfa silage left from last year is using it as a supplement to brome grass pasture. The cows are very fond of it and eat it clean, but recently when the cows were taken off the pasture and put on alfalfa silage and alfalfa hay, they decreased in their milk flow uniformly about 3 pounds each per day.

A visit was made to the cattle on the public domain range in the hills directly north of the project. One man herds about 700 head of cattle there for the project farmers, charging 50¢ per head per month. The range is getting very short and the water very scarce.

The conditions on the Shoshone National Forest range were discussed with the herder who is employed by the Association. He reported that there is abundance of water on that range but that feed is getting scarce due to drouth.

During the week ending July 22, 4 farms were visited, 3 men called at the office, 5 other conferences were held, 9 cows were tested in 2 herds, and 1 hog feeding test was started.

During the last three days of the week, a visit was made to the Huntley Project, where a visit was made to the cheese factory. The cheese maker and the Secretary were interviewed regarding the management of the cheese factory. The plats at the Huntley Experiment Farm were inspected and the Annual Project Picnic which was held at the Experiment Farm was attended.

A hog feeding test was started on the farm of D. C. Dillavou, on full feeding pigs from the start on ground grain and skim milk with excellent pasture available.

5 August, 1916.

DEMONSTRATIONS ON RECLAMATION PROJECTS
Field Notes.

Boise.

During the week ending July 22, preliminary weighings were made on two bunches of hogs. One bunch has been turned into standing wheat and the other into a small patch of peas and a patch of mixed barley and wheat. The barley is bearded and to prevent possible trouble from the beards, the barley will be mowed and fire run through it.

Part of three days was spent on the farm of the Avalon Orchard Company at Kuna in starting construction on a 12x40 foot concrete silo. This is the second concrete silo under construction on the Boise project this year.

A herd of 50 head of cattle was vaccinated for blackleg prevention this week. One calf in the herd had died recently and two others were sick when the herd was treated. Apparently rules regarding any definite "blacklog season" fail on this project.

One day was spent with Mr. Lloyd in charge of County Agent work in northern and western states, Mr. Hochbaum, State Leader of County Agents in Idaho and Mr. McCall, Canyon County Agent, in visiting farms where work has been done by the County Agent and by this office.

Truckee-Carson.

COOPERATIVE SHIPMENT OF HOGS.

During the week ending July 22, a cooperative shipment of hogs was accompanied to San Francisco.

The marketing of hogs from the Truckee-Carson Project by farmers having small numbers for sale, has up to the present time been very uncertain and has been one of the most discouraging features in the development of the hog industry in this valley. It now appears this difficulty will be overcome in the future by cooperative shipping.

On July 17 a trial shipment of two car loads of hogs was made. In spite of excessive delay in transit and the light loading of the cars, the results were very satisfactory. Sixteen farmers participated. The consignments were from one to twenty-seven hogs, with a total of 125. The hogs were all weighed before delivery to the local stock yards and, before loading, those belonging to each shipper were given a mark of identification at the selling point.

5 August, 1916.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued)

The hogs were consigned to the Western Meat Company, South San Francisco. This company, previous to shipment, quoted the following prices, which were good for ten days. Hogs weighing from 100 to 150, 8¢ per pound; 150 to 250, 8-3/4¢ per pound; 250 to 325, 8½¢ per pound. These prices applied to well finished, smooth hogs. Thin hogs, rough and oversized hogs were subject to discounts. The grading, however, was very satisfactory. In addition to the above quotations the Western Meat Company, reserves the right to call on the shipper for 1/2 the loss occassioned by animals being condemned by Federal inspector, or 1/4 of 1¢ per pound would be deducted by the Meat Company and all loss from condemnation provided for by them.

The freight rate to South San Francisco at present is $61.75 per 36 foot car. This will be reduced soon to $58.90. The shipping time is 28 hours, but on account of very poor connections made by the cooperative shipment the hogs were in transit 54½ hours. This of course resulted in very heavy shrinkage. The average shrinkage on all hogs in the shipment was 13.2%. The percent of shrinkage varied considerably, depending probably on the method of the feeding of the hogs. There is no doubt that if the shipment had gone through within the shipping time, the shrinkage could have been kept well under 10%.

The transportation cost, which was 57.2¢ per hundred pounds, was in excess of what it should have been because of the failure on the part of some farmers to deliver their hogs for shipment. Had the cars been loaded to capacity the transportation cost would have been reduced to about 45¢ per hundred pounds.

The loss due to shrinkage estimated on price paid for prime hogs was $1.14 per hundred. If the shipment had gone through on scheduled time this figure would have been reduced to approximately 80¢ per hundred. The total cost of shipping including loss from shrinkage and cost of transportation was $1.14 plus 57.2 cents, or $1.71 per hundred pounds. As previously explained this figure under proper shipping conditions should have been reduced to approximately 80¢ for shrinkage and 45¢ per hundred for freight, a total shipping cost of $1.25 per hundred pounds.

5 August, 1916.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued)

The average price received for all prime hogs was $8.75 per hundred in San Francisco or $7.04 locally. The average local price for the other grades of hogs can be estimated from the above figures. Each farmer's hogs were graded and weighed separately and checks were mailed at once by the Western Meat Company to each shipper. The freight charges were paid by the buyer and deducted from the amount of each shipper's check according to the weights.

The next cooperative shipment is expected to be sent out in about three weeks providing at least one full car load is offered.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Scottsbluff.

The entire week ending July 29 was devoted to hoeing and cultivating the crops, as all irrigation was stopped temporarily on July 24.

On July 23, the Government ditch had a big break near the headgate, which necessitated shutting off irrigation water. Some of the crops began to suffer a little, but a beneficial rain fell on the 26th. Rain fell again on July 29. The rainfall has been sufficient to carry the crops over. The heavy rains and high winds have lodged all of the oat varieties very badly, but it is hoped that some results will be secured in spite of this lodging.

Under date of July 27, Mr. Holden wrote to Mr. Scofield as follows:

" I am sending you herewith the results of the hog pasturing work for the first period, from April 29 to June 28.

"Spring opened up very favorably for pasturing but later it turned cold, and during the fore part of May the temperature dropped down to 20 degrees. The cold weather was followed by heavy winds which did much damage by drifting soil from an adjacent oat field onto the pastures. This was especially true of the pasture of Lot 2 (barley). The pasture was so badly damaged that the hogs were kept off the pasture for six days to give the alfalfa a chance to recuperate. Again, on June 12, the farm was severely hit by hail which made it necessary to keep all the hogs off the pasture for one week in order to give the alfalfa a chance to get a new start. The season as a whole was backward. The hogs were charged with the grain fed while in dry lot.

"Due to shortage of pasture hogs were removed from the different lots as follows: One (113 pounds) from rotation 65 on June 5; Two (177 pounds) from Lot 1 on May 27; Two (190 pounds) from Lot 2 on May 27; Two sows (355 pounds) from Lot 3 on June 20; and four sows (1238 pounds) on June 5, and two sows (680 pounds) on June 20 from Lot 4.

"A tabulated statement of the results is given in the table on the following page.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Scottsbluff (continued).

Item.	Rotation 65 (1/4-acre) CORN		Lot 1 (1 acre) CORN	Lot 2 (1 acre) GROUND BARLEY	Lot 3 (1 acre) CORN	Lot 4 (3/4-acre) CORN	
	Plat	Acre basis				Plat	Acre basis
Initial number of hogs:							
Shoats.....	6	24	20	19	15		
Sows.....					2	6	8
Pigs.....					13	37	49.3
Total initial weight.....	501	2004	1481	1456	1401	2224	2965
Total final weight.....	861	3444	2628	2419	2430	3166	4221
Gain made.....	360	1440	1147	963	1029	942	1256
Grain fed.....	845	3380	2834	2897	2316	2365	3153
Daily per cent grain ration...	2.26	2.26	2.26	2.52	2.09	2.27	2.27
Grain per pound gain.....	2.35	2.35	2.47	3.00	2.25	2.51	2.51

At the beginning of the experiment Lot 2 had 20 shoats, but on May 27 one became sick and was removed. When removed, the shoat weighed less than at the beginning of the experiment. This hog is eliminated from the result here given.

Truckee-Carson.

During the week ending July 22, the maximum temperature was 97; minimum temperature, 45. The maximum temperature for the week ending July 29 was 99; minimum temperature, 42.

Mr. Headley returned from a trip to Reno on the 16th. While there State Fair premiums for the Boys' and Girls' clubs were arranged for and arrangements were also made for a tomato canning demonstration to be held at the Experiment Farm soon after the first of September. The demonstrations will be given by the Extension Department of the University of Nevada, and the tomatoes from the variety tests will be used.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson (continued).

The new machine shed was painted; the trees in C6 were cultivated and hoed; the entire farm irrigated; foxtail removed from the fields; barley varieties on W. Williams' farm cut; the alfalfa cut and shocked; and the sweet clover on Y1, 2 and 3 plowed under.

The pigs in Lot 1 have continued to make satisfactory gains. This pasture is now supporting 740 pounds of hogs, or nearly 3,000 pounds per acre, and the growth still seems to be sufficient.

The pigs in Lot 2 have made very poor gains, the average percentage of daily gain being only .30%, so that the feeding for this period has been conducted at a loss. This pasture is now supporting 2240 pounds per acre, but a part of the land is poor and is apparently not providing sufficient growth to satisfy the appetites of the pigs.

Items.	Pigs on alfalfa pasture. Area, .25 acre. Period, July 15 to July 29. (14 days) Lot I	Pigs on alfalfa pasture, Area, .53 acre. Period, July 15 to July 29. (14 days) Lot II
Number of pigs.....	10	17
Initial weight, pounds.....	668	1137
Final weight, pounds.....	740	1186
Total gain, pounds.....	72	49
Daily gain, pounds.....	5.2	3.5
Daily gain, per cent.	.74	.30
Barley fed, pounds.....	193.2	320.0
Cost of barley @ 1½¢.....	$2.90	$4.80
Value of gain at 7¢.....	$5.04	$3.43
Net return.....	$2.14	-$1.37
Net return per acre.....	$8.56	-$2.58
Daily net return per acre...	$ .61	-$ .18

Belle Fourche.

During the week ending July 29, the maximum temperature was 103; minimum temperature, 56 ; precipitation, 1.00 inch.

All irrigating of sugar beets, potatoes, and corn was finished

Belle Fourche (continued).

except the corn in field O.

The stand of grasses in the pasture mixtures seeded in field R was rather poor, so mixtures I, II and III were reseeded and the whole field irrigated. Another quarter of an acre was fenced in field Q for cow pasture. The cow pasture and small grass plats were irrigated.

The hot dry winds of the week ripened all grain rather prematurely, and the indications are that yields will be rather light.

Mr. Scofield left the station on Thursday, the 27th.

Mr. Allen Clark, of the Office of Grain Investigations, arrived at the station on the 26th.

San Antonio.

During the week ending July 29, the maximum temperature was 97; minimum temperature, 71; greatest daily range, 23. Showers came on several days, the total precipitation being .28 inch.

All cotton, orchards and fallow fields were cultivated. Fallow plats in the rotation experiments were harrowed. Cotton in the rotation experiments were weeded. Orchards were weeded. Plowing of milo plats in the rotation experiments was started, the following plats being plowed: A4-13, A5-2 and 5, B4-16 and 19. Cowpeas were planted on plats A5-12 and A5-16, in the rotation experiments.

Milo in the rotation experiments was threshed the first part of the week. The yields were extremely low. The low yields were largely due to the poor stand obtained from the first planting and the very dry weather which prevailed during the growing season.

Umatilla.

During the week ending July 8, the maximum temperature was 91; minimum temperature, 45; precipitation, .55 inch.

As a result of a considerable number of calls for advice on various subjects a number of trips were made about the Umatilla and neighboring projects.

Cutting of hairy vetch (V. villosa) for seed on the farm was started during the week.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Umatilla (continued).

The work of continuing soil moisture observations and irrigating was continued in regular routine.

The recent heavy rains caused the loss of large quantities of hay throughout the State, and seriously damaged a large portion of the first crop of alfalfa about Hermiston. The cool weather also tends to hold back melon, corn, alfalfa, and other crops that require heat for rapid growth.

During the week ending July 15, the maximum temperature was 94; minimum temperature, 50; precipitation, trace.

The second crop of hay was cut from the various fields.

The following yields were obtained from D4, where light and heavy manuring of alfalfa are compared with plats receiving no manure.

No manure.			8 tons per acre.			32 tons per acre.		
	Crop			Crop			Crop	
Plat	1st.	2nd.	Plat	1st.	2nd.	Plat	1st.	2nd.
A1	.8	1.5	A2	1.6	1.94	A3	2.02	2.16
A4	1.0	1.52	A5	1.98	2.06	A6	2.14	2.20
B1	.8	1.52	B2	1.94	2.06	B3	2.32	2.50
B4	.78	1.74	B5	2.16	1.58	B6	2.52	2.32
C1	1.26	2.12	C2	2.50	2.30	C3	2.62	2.64
C4	1.14	1.74	C5	2.36	2.16	C6	2.68	2.54
Average	.96	1.69		2.09	2.01		2.38	2.39

Irrigation water is applied to this land each week; this keeps the moisture content of the soil sufficiently high to influence maximum growth. The same would be true if water were applied at slightly longer intervals, but it is impossible to get water in this way.

During the week ending July 22, the maximum temperature was 88; minimum temperature, 50; precipitation, .23 inch.

Umatilla (continued).

Part of the vetch cut last week was flailed out.

Or account of the high price of vetch seed, and the difficulty of harvesting it by ordinary means it becomes practical and advisable to cut the crop with a mower and thresh it by hand.

A determination was made to find if it were feasible to cut heavy seed bearing vetch plants by hand. The cost of labor involved in this operation is estimated as follows:

2 men and team: 1/2-day cutting with scythe and hauling...	$3.40
1 man threshing: 1/2-day.....	1.20
Total.....	$4.60

From the plants collected in 1/2-day by two men, 58 pounds of seed was obtained; this at 20¢ equals a value of $11.60, or $7 above the cost of man and team work. The land from which this vetch was taken was heavily seeded by shattering that took place before the plants were removed, therefore the gain in value of seed over cost of harvesting is net. The plants handled in this determination were placed on a canvas which prevented loss of seed by shattering while the crop was curing.

During the week ending July 29, the maximum temperature was 87; minimum temperature, 47.

Routine work was continued without interruption.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Huntley.

During the week ending July 29, 7 farm visits were made.

A number of the farmers interested in irrigated pastures were visited in company with Mr. Hansen. It appears now that most of the pastures seeded last spring will need to be reseeded as the stand secured is poor, with one or two exceptions.

A trip was made to Hysham, Montana, during the week, where the owners of three different types of silos were interviewed, and the silos inspected. Since climatic conditions around Hysham are very similar to conditions on the Project, the experience of these silo owners should be of interest to prospective silo builders in this vicinity.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley (continued).

Early this spring Hysham experienced a very severe wind storm which completely demolished a home-made silo of the "Wisconsin" type, and badly damaged a stave silo made by a Spokane firm. A third silo made by a Seattle lumber company withstood the storm without being damaged. Another fact worthy of notice is that silage in the "Wisconsin" type of silo was frozen to a considerable depth around the walls last winter. Silage in the stave silo was frozen solid, while the silage in the Seattle lumber company silo, which had a double wall and about a three-inch dead air space between the walls, was frozen very little.

Uncompahgre.

During the week ending July 29, 13 farm visits were made. There have been several heavy showers during the week, and the roads have been in a sloppy condition. On account of the weather, 3 whole days were spent in the office in getting out letters to farmers in regard to stock exhibits at the Fair, and to members of the pig clubs.

At a meeting of the citizens of Montrose and the local Grange, arrangements were made during the week for the holding of the Fair at Montrose this fall. The interest was good, and the chances are very good for the stock show.

The Montrose Creamery reports trouble in securing enough cream for their increased butter trade. They are still paying 26¢ per pound butter fat.

Arrangements were made for the regular testing of two herds of dairy cows for butter fat and one hog feeding test.

Requests have been made for information regarding the bringing in of two carloads of Holsteins this fall.

During the week ending August 5, 9 farm visits were made. Twenty-five samples of milk and cream in 6 herds were tested. Six requests for service, and one request for information were received.

During the week one new hog feeding test was started. In this test 25 pigs will be run on alfalfa pasture with a ration of 3 per cent. corn in addition.

One test on the feeding of pigs on ground barley in addition to alfalfa pasture was looked after during the week, and the second weighing was made. The pigs had been run 14 days and had made an average gain of 16 pounds. There were 41 pigs in the test. They

Uncompahgre (continued).

had received 3 pounds of barley and 4/7 pound of tankage. The total gain was 656 pounds on the lot. In charging the hogs with the cost of the grain and tankage it was found that there was a balance of $25.32 to be credited to the alfalfa pasture for the 14 days. This lot of pigs were farrowed the first of April, and had been kept growing at a rapid rate while on the sows. This trial goes to show the value of keeping the hogs growing while young. There are several lots of pigs at the same age on farms nearby that weigh less than 40 pounds.

The price of butter fat has advanced to 27¢, and there is still a shortage of cream for the local market.

The new crop of wheat is selling at the local mill at $1.65 for soft wheat, and $1.80 for hard wheat. This wheat is being taken from the fields to the mill and weighs very heavy. These prices are per hundred.

Tieton.

During the week ending July 22, 18 farms were visited, and 2 calls for assistance were answered. Milk was tested on 16 farms, silos were discussed with 14 farmers, bills of material for silos were figured in detail for 9 farmers. One day was spent in helping build a wood hoop silo.

There are now 2 new silos on the Project, both wood hoop silos with 4-inch fir flooring lining. One was bought made up at the mill prices, and the other was bought at lumber prices, and the entire construction was done on the farm. The former cost approximately $200 at the mill, and the hoops, doors and roof were made up. The latter cost approximately $100 for the material as it came from the yard, except that the doors and door frames were made up. Both silos were 12 by 32 feet, or 75 tons capacity. The bills for labor were not made up when the farms were visited.

The farm produce markets are unchanged. Hogs are selling at $8.50, and butter fat at 26 cents at local creameries with the Cowichee factory paying 28 to 33 cents for fat in cream and whole milk, respectively. It is expected that hay will sell at $8 to $10 in the stack, but so little has moved to date that it does not serve as a good indication of the price. Several farmers are talking of selling their cows and the price of hay is one of the reasons mentioned. Other factors which decrease the popularity of dairying

Tieton (continued).

are the difficulty of obtaining reliable help during the summer and also the difficulty experienced in obtaining profitable cows at reasonable prices.

In this connection it is interesting to note that one herd of 6 cows that have been on test beginning with December, 1915, will be sold or traded as soon as possible for cows of a better grade. Other herds have been culled out to some extent or cows have been put on cheap pasture to be disposed of when they are in better flesh.

During the week ending July 29, 32 farms were visited, 8 calls for assistance were received and answered, 7 office conferences were held with farmers, and milk was tested on 7 farms. Dairy records were discussed on 2 farm visits, and silos were discussed with 18 farmers. Pigs for feeding tests were weighed on 3 farms, 2 of which are pig club propositions.

The hay baling outfits are busy but little hay is coming on the market as yet. The corn crop has made a remarkable growth during the last two weeks, and several farmers who were waiting for their corn to make a good growth before planning to build silos are now determined to build.

There were 16 silos on the Project at the beginning of this season. Two new ones have been built, and 12 other farmers are planning definitely to build during next month. Seven of these have bought some type of commercial silo, and the other five have bills of material for home-made types. The types used to date are commercial and home-made stave, octagonal 2 x 4, modified Wisconsin and wood hoops with fir floor lining.

The Utah-Idaho Sugar Company has promised a sugar factory to the Valley providing 7,500 acres of beets can be contracted for under a three-year contract. The prospects are that the proposition will be accepted for considerable acreage has been volunatarily pledged. This proposition will not affect the Tieton farmers to any great extent except possibly those portions of the Project around the terminus of the Wide Hollow electric line and the Cowichee canon railway line.

Boise.

During the week ending July 29, the first case of cholera of the year on the west part of the Project occurred. Two pigs were lost from a bunch of seven, and three of the remaining five showed

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

high temperatures when they were vaccinated Saturday night.

Preliminary weighings were made on two bunches of hogs and second weighings on two others. Owners seem to feel a keen interest in the work.

The cooperative cheese factory at Bowmont has been operating for about three weeks. On Tuesday of this week a formal opening was held at which about 150 people were present, a number coming from Nampa and Boise. Several talks were given. At present, the output of the factory is only about 150 pounds of cheese daily but it is expected that this will be increased gradually up to the capacity of the plant, which is about 600 pounds.

North Platte.

On Sunday of the week ending July 29, a bad break occurred in the main Government canal about 7 miles below the headgate. This will cause the farmers on the Project to be without water for about 8 or 9 days. On account of they dry weather that has prevailed during the summer, the farmers have been using all the irrigation water they could get, and a break at this time will cause a heavy loss. The break in the canal was caused by flood water coming down to the ditch as a result of a "cloud burst".

Two cases of hog cholera occurred during the week, one in the vicinity of Minatare, the other in the vicinity of Bayard. One herd of 16 hogs was vaccinted, the other herd of 42 hogs was not, because every animal in the herd showed signs of sickness. In both cases the source of the trouble is unknown. However, in one case it is suspected that the use of corn shipped in from the eastern part of the State was the source of the trouble.

The 36 shoats in Mr. Lambertson's feeding test were weighed during the week. The shoats were fed a limited ration of ground barley, corn, and meat meal, receiving a 2.3% ration of this mixed feed. It required 2.35 pounds of grain per one pound of gain and cost $3.23 for each 100 pounds of gain.

The Farmers' Union Store at Morrill is now receiving cream from approximately 125 farmers. The price paid for butter fat is 25¢ per pound.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone.

Progress of Pasture Tests.

The following letter from Mr. Hansen to Mr. Farrell indicates the progress which is being made with the pasture plantings made on the Shoshone Project last spring:

"I spent a day last week (July 28) with Mr. Magruder at Powell and saw part of the pastures that were started last spring. I should liked to have had more time with him, but we were having some difficulty with the labor here and it was necessary for me to get back.

"We visited seven of the farms where pastures were planted and as a rule these pastures are starting out in good shape. Magruder tells me that the pastures that we saw were some of the most successful ones and that probably about one-half at least of all the pastures planted will be successful. These are distributed quite well over the Project. Some of the pastures that failed to start were on seeped land or on poor soil that had never grown good crops of other kinds, so that in most cases where the grass was planted on good soil and had been properly cared for, the prospects are good.

"A five-acre field on the farm of Mr. D. Livingston was especially good. This was planted to a mixture of 6 pounds of brome grass, 8 pounds of meadow fescue, and 2 pounds of alsike clover per acre. No grain was planted with the grass, but the land was in oats and barley in 1915, and there was almost a full stand of volunteer grain. The stand of grass and clover was very good, and 8 to 10 inches in height. Mr. Elliott and Mr. Knight also have very good stands on land planted to the complete Huntley mixture. The stands on some of the other farms were only fair, but sufficient, I believe, so that they will come out in good shape next season.

"We also saw a few of the fields that were planted to the Pringle Champion wheat sent out from here last spring. All of the fields that were visited were doing very well and as a rule were on good clean land, so that there should be an abundance of good seed of this variety on the Project for next season. Mr. Elliott's wheat, which was the best that we saw, will probably yield close to 50 bushels per acre. All of the men who had this wheat appear to be very well pleased."

COOPERATIVE WORK IN DAIRYING AND MEAT PRODUCTION.

The act making appropriations for the Department of Agriculture for the fiscal year 1917 contains an appropriation for $40,000 for cooperative work in dairying and meat production on the dry lands and irrigation projects. While this appropriation is less than half the amount estimated for it nevertheless provides authority and funds for inaugurating the work during the coming year.

FIELD NOTES.

Umatilla.

During the week ending August 5, the maximum temperature was 98; minimum temperature, 43.

The following table gives the application to and the percolation from lysimeters for the period from June 21 to August 2.

Period.	Application to each lysimeter inches		Percolation from lysimeters			
	Irriga.	Rain	No. 1	No. 2	No. 3	No. 4
June 21 to June 28	2.0	1.42	1.905	1.311	.085	.094
June 28 to July 5	2.0	.64	2.963	2.251	.668	.695
July 5 to July 12	2.0		2.115	1.145	.183	.131
July 12 to July 19	2.0	.23	1.413	.486	.106	.069
July 19 to July 26	2.0		1.604	.642	.271	.575
July 26 to Aug. 2	2.0		1.550	.449	.215	.192
Total for crop season to date	29.0		22.380	11.603	2.288	2.336

The amount of percolate from all lysimeters increased perceptibly during the period of June 28 to July 5 due to the heavy rains during the period of June 21 to June 28. The second crop of alfalfa was cut from lysimeters 3 and 4 on July 12 and there is a slight increase in flow during the period of July 19 to July 26. At present the rate of percolation from 3 and 4 is decreasing rapidly as the crop grows. The alfalfa crop is short and has wilted three times during the periods included in the table indicating that two inches per week is not sufficient to grow alfalfa on this soil type in good growing weather.

The following determinations are soil bridge readings. Analyses show the water to contain large amounts of bicarbonates, with fair amounts of chlorides and small amounts of sulphates.

The increase in total salts in lysimeter one water after May 18 is probably partly due to turning under the vetch crop on May 11. The salts in lysimeter three water increased at a similar rate to which they did in 1915.

The average salts from all lysimeters except one are considerably higher than during 1915.

Umatilla (continued).

Soluble salts as parts per million in irrigation water, Hermiston drain water and lysimeter percolate for the crop season.

Date	Irrigation Water	Hermiston Drain	Lysimeter 1	Lysimeter 2	Lysimeter 3	Lysimeter 4
April 12	42	--	263	258	340	640
25	42	266	230	247	334	624
May 2	50	273	182	272	346	474
11	75	293	165	298	367	650
18	74	271	162	308	381	588
24	58	271	157	355	399	610
31	52	278	130	324	386	624
June 7	72	282	134	397	409	658
14	114	265	148	441	375	640
21	144	275	145	560	423	688
28	120	276	155	460	403	640
July 5	150	272	151	464	457	592
12	199	265	151	404	473	650
19	228	262	166	432	417	620
26	210	248	163	395	437	568
Aug. 2	211	262	191	396	434	583
Average	115	270	168	377	399	615
Average 1915	104	242	221	216	260	448

San Antonio.

During the week ending August 5, the maximum temperature was 94, minimum temperature, 69; greatest daily range, 24. The total precipitation was .61 inch.

Plowing of milo stubble in the rotation plats was completed. Orchards were cultivated. The farm roads were disked and weeded. Weeds and Johnson grass on waste places were mowed. Johnson grass in the pastures on D4 and D5 was also mowed.

Steers used in the steer pasturing experiment were returned to the Sudan grass on July 31. Since the rains during the past month, the pasture crops have been growing well.

Mr. A. A. Bryan, of the Office of Corn Investigations, left early in the week for a short trip to Waco and vicinity.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Scottsbluff.

The greater part of the week ending August 5 was devoted to cutting the various grain plats as they ripened; also, the field grain that matured. The corn was cultivated. All of the field crops that were not irrigated before the break in the canal occurred were finished during the week. Everything has now been irrigated, and is in good shape.

Threshing of the grain will probably be started as soon as the weather becomes settled. On account of the frequency of showers the grain is beginning to mold in the shocks.

On August 4, the farm picnic was held. Quite a large crowd was present, but not as large as in past years. This was due to the fact, no doubt, that the water was out of the Government canal for a week or more and was turned in about two days before the date of the picnic, and everyone able to draw water and use it to advantage was busy irrigating.

Belle Fourche.

During the week ending August 5, the maximum temperature was 96; minimum temperature, 57; precipitation, .21 inch.

The second cutting of alfalfa in field A was harvested, and hauled during the week. The harvesting of all grains is completed except the grain varieties. The sugar beets and potatoes were farrowed in order to be ready for a second irrigation, if necessary. The cow pastures were irrigated and another 1/2-acre fenced, making 1-1/2 acres for the two cows which will probably be enough to carry them continuously for the rest of the season. The irrigated forestry was irrigated during the week.

Results obtained from pasturing spring pigs on rotations 65 and 69 are as follows:

Dates	No. of days	No. of pigs	Weights		Gain			Lbs. corn fed	Net return per acre.
			Initial	Final	Total	daily	per day per pig		
Rotation 65									
7/8-7/18	10	10	599.5	666.5	67.0	1.08	.67	120	$13.96
7/18-7/28	10	*9	609.0	658.0	49.0	.77	.544	122	8.84
Totals	20				116.0			242	22.80
Rotation 69									
7/8-7/18	10	10	609.0	663.5	54.5	.845	.545	122	$10.38
7/18-7/28	10	*8	521.0	585.5	64.5	1.480	.645	104	13.90
Totals	20				119.0			226	24.28

*One pig was removed at this time from rotation 65 and two pigs from rotation 69 as pasturage seemed insufficient for all ten pigs.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche (continued).

Results obtained from pasturing ewes with lambs on rotation 71 and sheep on triangular plat at south end of series II, are as follows:

	Dates	No. of days	No. of sheep	Weights Initial	Weights Final	Gains Total	Gains daily	Gains per day per sheep	Net return per acre
	6/10-6/21	11	12	731.0	760.5	29.5	.37	.27	$8.26
#71	6/21-7/3	*							
	7/3-7/13	10	6	387.5	405.0	17.5	.476	.29	4.90
	7/13-7/24	11	6	405.0	413.0	8.0	.155	.133	2.24
	7/24-8/3	10	6	413.0	419.0	6.0	.124	.100	1.68
	Totals	42				61.0			17.08
	5/29-6/8	10	10	1419.5	1466.5	47.0	.28	.47	$3.29
	6/8-6/17	9	10	1466.5	1446.0	-20.5			-1.44
	6/17-6/27	10	10	1446.0	1498.5	52.5		.525	3.675
AII	6/27-7/7	10	10	1498.5	1467.5	-31.0			-2.17
	7/7-7/18	11	10	1467.5	1538.0	70.5	.452		4.94
	7/18-7/28	10	10	1538.0	1529.5	- 8.5			-.60
	Totals	60				110.0			$7.70

*Sheep were not on pasture during this period.

Huntley.

During the week ending August 5, the maximum temperature was 97; minimum temperature, 55; precipitation, .11 inch. Weather has continued unusually warm and benefitted by the rain of previous week, crops are making excellent growth. Corn and sugar beets are doing especially well. An unusually large amount of irrigation has been necessary so far this season.

A rather damaging hail occurred on parts of the Project on Aug. 1. Small areas at Wheatley, Worden and Pompey's Pillar were damaged most. In many cases grain was almost a total loss and sugar beets and corn were rather badly damaged. Crops on the Experiment Farm were not damaged.

The pasture in field A-II continues to make fair growth and the feed produced is ample for the two cows, although the growth is not as rapid as during the fore part of July. At that time there was more than enough feed for the cows and it was necessary to clip plats

Field Notes.

Huntley (continued).

A-II-1 and 2. Later, on July 14, an extra cow was placed on the pasture. It soon became apparent that the pasture would not carry the three cows any length of time, and the extra cow was taken off after four days.

Irrigated Rotations.

The roadways and alleys have been hoed in both fields.

On August 1, Dwarf Essex rape was sown in the two plats of corn in rotation 69. The seed was sown broadcast between the corn at the rate of 3 pounds per acre.

Small grains were harvested on the following plats: Oats, K-III-13; IV-5, 15, 18; V-2, 10, 15, 19: Wheat, K-II-7, 8; V-3: Flax, K-II-1; III-16.

The potato plats in field L-IV were dusted with paris green. Adult potato beetles have been very numerous and difficult to control during the season, especially on potato plats lying next to spring seeded alfalfa. The beetles migrate in large numbers from the weeds in these alfalfa plats on to the adjoining potato plats. Very few larvae are observed at the present time, but considerable eggs are found. A second brood is expected.

Sugar beets were hoed for the third time.

The harvesting of the second crop of alfalfa was begun August 4. Light rains have caused some little trouble in curing the hay.

The gains made by the spring pigs on alfalfa pasture in field K, from July 20 to July 30, are given below:

Spring pigs-Alfalfa pasture. Rotation 67.

No. of hog	No. of days	Initial weight	Final weight	Av. daily gain	% daily gain
76	10	53	58	.5	.88
77	10	51	56	.5	.91
78	10	45	49	.4	.83
79	10	40	45	.5	1.22
80	10	40	45	.5	1.22
81	10	57	63	.6	1.00
82	10	42	47	.5	1.15
83	10	43	48	.5	1.13
Total		371	411	4.0	--
Average		46	51	.5	1.04

Pounds grain per pound gain.....1.85

Daily return per acre.....$.21

Huntley (continued).

The gains made by the fall hogs in the feed lot are given below:

Hogs in feed lot- 4% corn.

No.of hog	No.of days	Initial weight	Final weight	Av. daily gain	%daily gain
51	10	199	220	2.1	1.12
52	10	189	211	2.2	1.13
53	10	189	213	2.4	1.24
54	10	196	220	2.4	1.20
55	10	190	210	2.0	1.00
Total		963	1074	11.1	--
Average		193	215	2.2	1.14

Corn fed, lbs.....385.2
Pounds grain per lb. gain..... 3.47

111 lbs. pork @ 7¢.....$7.77
385.2 lbs. corn @ $1..... 3.85
Net returns.....$3.92

On July 30, one ewe and one lamb were taken off the grass pasture in field B-V. The pasture seemed to be insufficient to carry all of the ten head of sheep. On the same day the remaining four lambs were replaced with four other lambs of approximately the same age and weight. This arrangement was made in order to wean the lambs and dry up the ewes. The gains made by the ten head of sheep on the 1/2-acre for the period July 20 to July 30 are shown in the following table:

5 ewes and 5 lambs: Pasture, grass mixture, Field B-V.

No.of sheep	No.of days	Initial weight	Final weight	Gain
Ewes.				
66	10	120	117	-3
68	10	140	136	-4
70	10	120	118	-2
72	10	151	147	-4
74	10	119	116	-3
Total		650	634	-16
Average		130	127	-3

Field Notes.

Huntley (continued).

No. of sheep	No. of days	Initial weight	Final weight	Gain
Lambs.				
67	10	97	97	0
69	10	90	89	-1
71	10	98	97	-1
73	10	117	114	-3
75	10	93	91	-2
Total		495	488	-7
Average		99	98	-1

The heifer on the 1/2-acre of mixed pasture grasses in field B-V weighed 884 pounds on June 30, and 862 pounds on July 30. The supply of pasture, however, seems to be sufficient. The loss in weight is probably due to warm weather.

Truckee-Carson.

During the week ending August 5, the maximum temperature was 98; minimum temperature, 45.

The second cutting of alfalfa was stacked. The average yield for all fields was 1850 pounds per acre, which is about normal on the Experiment Farm for the second crop.

The barley varieties grown on the farm of W. H. Williams were threshed August 3 and 4. The six varieties included in the test were planted in duplicate, but a part of the west series contained alkali soil so that the yields of four of the plats on this side were considerably lower than on the east series.

The following table gives the results obtained with pigs on alfalfa pasture for the entire season, to August 5.

Ten pigs were put in lot 1 on April 24. In this drove were 3 Durocs, 3 Berkshires, and 4 Duroc-Berkshire crosses. The Berkshires and crosses were raised on the Experiment Farm and were of practically the same age and weight at the beginning of the experiment. The Durocs were purchased from the Churchill Creamery farm. They were practically the same age as the others, but were not in so thrifty condition. The percent. daily gains made by each breed for the period were: Durocs, .97%; Berkshires, 1.05%; and crosses, 1.10%. The net return per acre for all breeds was $81.28. The feeding of the pigs in this lot will be continued without alternation until the daily gains begin to show a marked decrease due to short pasture.

Field Notes.

Truckee-Carson (continued).

Eighteen pigs were placed in lot II May 13, 1916, but soon after this date one of the pigs was accidentally killed and the number was retained at 17. In this lot were 3 Durocs, 2 Berkshires, 2 crosses and 10 Duroc grades loaned by A. Baumann. The Durocs, Berkshires, and crosses were from the same litters as in lot I. The grades were somewhat older and heavier than the other breeds and seemed to retain an advantage throughout the experiment. The percent. daily gain of each breed during the entire period of the experiment was as follows: Durocs, .84%; Berkshires, 1.01%; Crosses, .70%; and grades, .78%. The net profit per acre for the season was $44.80. The smaller gains made in this pasture was apparently due to the poor growth of the alfalfa.

Item.	Pigs on alfalfa pasture. Area, .25 acre. Period, 4/24 to 8/5-103 days Lot I.	Pigs on alfalfa pasture. Area, .53 acre. Period, 5/13 to 8/5-84 days Lot II
Number of pigs.....	10	17
Initial weight, lbs.	262	629
Final weight, lbs.....	767	1297
Total gain, lbs.	505	668
Daily gain per animal, lbs.	.49	.47
Daily gain, per cent.	1.05	.87
Barley fed, lbs.	1002	1533
Cost of barley @ 1½¢.....	$15.03	$23.00
Value of gain at 7¢.....	$35.35	$46.76
Net return.....	$20.32	$23.76
Net return per acre.....	$81.28	$44.80
Daily net return per acre.....	$ .79	$ .53

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

Two days of the week ending July 15 were spent with Mr. Henderson in visiting swine growers and officers of the organization. As this is the only organization in the State which is absolutely up to

Minidoka (continued).

date, and of which a revised mailing list and a new survey is made each year, and is considered complete in all details, the assistance of the Bureau of Animal Industry veterinarians will be given to this more than to any other organization, and it will be held as a model to all other sections of the State. All possible assistance will be given by the inspectors to make a good showing here that will demonstrate what can be done towards controlling cholera by a strong and complete organization. The results last year were approximately 2 per cent. lower than in other sections of the control work.

The parasite affecting the pigs on the farm of Mr. A. H. Wiseman was finally determined to be trichinae by most of the authorities, although there was a disagreement among the veterinarians. The herd will be disposed of, the premises cleaned, and new stock secured.

With the withdrawal of the free serum the practice of allowing the hogs to run at large was largely done away with. This spring it was being done in only three of the nineteen school districts. A change in the sentiment of the people, more than anything else, has caused those of the most obstinate to be confined. It has taken twenty-one months to bring about this change.

Mr. Hochbaum, State Leader, accompanied by six county agents, spent Thursday on the Project visiting farms and studying agricultural conditions, the types of hog houses in use, the hogging off of field peas and the methods of holding the special mid-winter meetings were the points in which they were especially interested. Unfortunately not enough time had been allowed for this visit on the schedule so only one day could be spent on the Project, it being possible to go over only the south side.

With 47 requests, 18 necessary farm visits, and 3 meetings, the week ending July 22 was the busiest of the summer.

Mr. Potter, State Supervisor of Boys' and Girls' Clubs, spent two days on the Project visiting club members and others. Meetings were held with the ladies' clubs in two districts. It is evident that the only way to conduct the club successfully is to have the cooperation of the parents. Without this the club members become discouraged and neglect keeping up their work and records. In case the parents are not enough interested to cooperate, the time spent in trying to conduct clubs is wasted.

Two investigations of suspected cases of hog cholera were made. One was found to be due to no shade in the pasture, three high grade Poland China sows having been lost in one afternoon. The other case

Minidoka (continued).

was due to meat poisoning. The owner of the second herd does not believe in the serum treatment and did not report. The case was reported to the office by the district surveyman, one neighbor and a local stock buyer.

During the week ending July 29, the cattle on the open range between Acequia and American Falls and north of Minidoka were rounded up. The steers were shipped to the big markets, a few cows and calves brought back to the Project, and the rest again turned on to the range. The grass is poor and the cattle have not been gaining since June. The best offer made was 6 cents at the loading station. There were approximately 3300 head of cattle from the Project on this range, 2600 of which belong to one large outfit, the rest being made up of cooperative range herds from the farm. This range is never very good between June and October.

Hay for winter feeding of the range sheep is being held for such high prices that none has yet been contracted. Two years ago the Portland Feeder Company contracted for 5000 tons of hay to be delivered at their feed yards at Burley at $5.50 a ton each year for three years. The farmers are protesting but will probably be held to their contracts.

During the week ending August 5, Mr. E. P. Taylor, field horticulturist of the University of Idaho, spent three and one-half days, Mr. V. P. Fawcett, State Seed Analysist, one day, and Mr. J. W. Sessions, Professor of Agriculture at the Idaho Technical Institute, one day, with the work on the Project. They were taken to the farms of, or put in touch with, the men who especially desired assistance along the line of potato or fruit culture, seed or crop production.

The demonstration plats of Mr. Taylor are doing exceptionally well and are probably the best potato fields on the Project. The seed is badly mixed, however, it being necessary to do much roguing. Not much disease has as yet showed up.

While not as bad on the Twin Falls Tract, the clover is infested with both the clover thrips and the clover aphis. Either because of these pests or from some other cause, the production is not estimated to be as great as last year as the seed is not filling normally, the specialists estimating a shortage of from 35 to 50%.

The grain on the dry farms adjoining the Project is now being harvested. For the first time the combines are being used. Four different makes of the small combines drawn by eight horses are in use. All are doing satisfactory work. The grain is cut for $2.50 per acre. The yield is from 12 to 15 bushels to the acre.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Mindioka (continued).

Butter fat advanced one cent during the week now being 28 cents. Hogs are 7.60 and 7.65. Competition among the buyers is keeping the price up to 15 cents above the normal. 8½¢ is being asked for feeder lambs delivered to the scales at either Burley or Rupert.

North Platte.

During the week ending August 5, a call was made to diagnose some trouble in a herd of hogs that were receiving a ration of unthrashed bearded barley. A post-mortem made on one of the hogs that had died showed that the trouble was impaction of the bowels caused by the barley beards.

Two outbreaks of cholera were found during the week. Both were in a neighborhood where cholera occurred early in the spring and it is probably that the trouble came from an adjoining farm. One herd of 40 was vaccinated, but the other was not on account of the advance of the disease. Two herds on nearby farms were vaccinated at the requests of the owners, as a preventive against the cholera getting in their herds.

One farmer on the Project expects to build a pit silo within the next two weeks. Inasmuch as his farm is rather high and it is a considerable distance to water, it is probable that the pit silo will be satisfactory for a time at least. He expects to do considerable dairy business from now on.

During the last few days of the week the price of corn advanced from about $1.36 per cwt. to $1.54 per cwt. This is going to make a big demand for the new barley crop for hog feeds. Shorts sell for $1.40 cwt., butter fat, 26¢ per lb.

Huntley.

During the week ending Aug. 5, 15 farm visits were made. One day was spent with Mr. Hansen visiting farmers who seeded mixed pastures last spring. A poor stand was found in several instances and these farmers were advised by Mr. Hansen to reseed this fall. There will also be some new pasture seeded this month.

A disastrous hail storm visited a portion of the Project on Saturday, doing a great deal of damage. Many fields of grain just ready for harvest were completely destroyed. Not less than one-tenth of the Project crops suffered damage from the storm.

19 August, 1916.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Shoshone.

During the week ending August 5, 7 farm visits were made, 2 men called at the office, 2 other conferences were held, and 5 cows were tested for 2 farmers.

Milk records were discussed with 2 men who are cooperating in keeping milk records.

Grass pastures were discussed with 3 men who are cooperating in grass pasture tests, and with one man who is planning a test next year. The test for next year will be with a mixture of grasses sown early in the spring, in a stand of sweet clover which was sown this spring, and it will be pastured by cattle during the summer. Two of the cooperators have quite recently seeded grasses and are depending on frequent irrigation to prevent a crust being formed during the hot weather. The other cooperator has a good stand on most of his plat.

One of the farmers who has recently visited the herd sent to the Forest Reserve range by the Shoshone Livestock Association reports that the cattle have not been doing very well and that unless the steers do better from now on until they are brought back to the range, they will have to be fed some alfalfa hay before they are shipped. A well bred Hereford herd on ranges at lower altitudes where the grass is drier and more mature, are in better condition.. He thinks that the Association herd may do better later in the season.

The Office of Public Roads and Rural Engineering was sent a drawing and description of a hog house which seems to be most suitable for the Shoshone Project.

Uncompahgre.

During the week ending August 12, 8 farm visits were made and 5 requests for service and information were received. One meeting was held at the office to discuss plans for the dairy work at the Western Slope Fair next month.

The latter part of the week was spent in the San Luis Valley for the purpose of getting information on the feeding of peas to hogs and lambs, which is done extensively in that locality.

There have been some heavy rains during the last few weeks and considerable hay has been damaged.

The local creamery report a price of 29¢ for butter fat for first grade cream.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending August 12, the maximum temperature was 98; minimum temperature, 72; greatest daily range, 21. There was practically no precipitation.

The principal field work was that of harvesting corn. Harvesting of corn on the rotation plats was completed with the exception of two plats. Messrs. E. B. Brown and A. A. Bryan, of the Office of Corn Investigations, spent the first part of the week at the station, during which time the harvesting of the corn in their experiments was completed.

Field C6, on which an attempt is being made to eradicate the Johnson grass, was double disked. Wet weather during July caused much of the Johnson grass to start growth since the field was plowed in June. Corn stalks on a part of the rotation plats were cut and plowing of the corn plats was started.

Cotton on the station is opening rapidly and picking will be started soon. Considerable cotton has already been picked in the vicinity of the station. Indications are that the cotton crop will be rather light in this section.

Scottsbluff.

During the week ending August 12 all of the varieties of oats, barley and wheat were cut. Only the oats on field K remain to be cut; these are ripening up slowly and will not be ready until some time during the coming week.

Several days were spent in cleaning and shoveling out irrigation ditches and repairing the dike along the north end of the farm.

All of the hay has been cut, and if the weather continues favorable this will be ready to be stacked during the coming week. The corn is making splendid headway, but since only one month of growing weather remains, a rapid growth must occur to produce corn.

Yuma.

During the week ending July 29, the maximum temperature was 108; minimum temperature, 72; greatest daily range, 33. Twenty-seven acres were irrigated.

Men and teams were busy nearly the entire week hoeing and cultivating. Most all of the nurseries, orchards, and row crops were

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued).

cultivated.

Date plantings on A-16 were plowed in preparation for crop between trees. The following plats were plowed: A-12-2, D-4-1, C-37 and 38, and D-43. Manure was hauled to D-43 before plowing in preparation for a planting of fall potatoes.

The last planting of Laguna corn and teosinte was made on C-19 in the time of planting test. Varieties of western Indian corns were planted on C-20. This planting is cooperative with Mr. G. N. Collins. Alfalfa was harvested from the farm boundary roads and Sudan grass from fields B-1 to 4 and 13 to 16.

During the week ending August 5, the maximum temperature was 108.5; minimum temperature, 74; greatest daily range, 31. On July 31 a precipitation of .48 inch fell at the Experiment Farm. In Yuma this rain registered .92 inch. Such a rain at this season has no doubt damaged standing alfalfa seed considerably. The past three weeks have been unusually severe on work stock as the relative humidity has been high along with high temperatures.

Thirty-one acres were irrigated. Much hoeing and cultivating continued throughout the week.

The newly leveled lands of C-1 to 5 were plowed, disked and planted to Whippoorwill and Blue Whippoorwill cowpeas for green manure crops.

Hay was harvested from Sudan grass plats and D-13, and alfalfa from fields B-6 to B-10; C-21, 22, 24; D-17, 18, 19, 22, 23; and E-7 and 8.

Alfalfa seed representing the third cutting for seed was harvested from D-21. Grain sorghums from fields C-6 and D-6 to 9 were thinned.

The steers being carried on the alfalfa grazing test appear to be making very small gains during the hot weather, but this corroborates the opinion of most cattle men in this section.

Gains have been made by hogs on pasturing experiment as follows:

6 Hogs in Experiment.

Dates		No. of days	Weights, Lbs.		Gains				Lbs. milo fed	Net returns per acre.
Initial	Final		Initial	Final	Total	Av. daily	% daily	Av. per day per hog		
7/4	7/11	7	502	531	29	4.143	.8066	.6905	70	$5.32
7/11	7/18	7	531	560	29	4.143	.7628	.6905	73.5	5.18
7/18	7/25	7	560	598	38	5.429	.942	.905	78.7	7.48
7/25	8/1	7	598	636	38	5.429	.884	.905	84.0	7.28
6/20	8/1	42	425.3	636	210.7	5.017	.963	.8361	306.2	47.74

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued).

The hogs have made a total gain of 29 pounds per period of seven days for three consecutive weeks and a total gain of 38 pounds per period of seven days during the past two weeks.

Belle Fourche.

During the week ending August 12, the maximum temperature was 96; minimum temperature, 46; precipitation, 1.22 inches.

All of the alfalfa on field A was irrigated and alfalfa in field O was cut and raked. The second cutting alfalfa in field I was left for seed, and so far the prospects for a seed crop are good.

The wheat, winter wheat, and barley on the dry land rotations were threshed during the week. The yields of these grains were as follows:

	Wheat	Winter wheat	Barley
Maximum	22.1	16.1	42.7
Minimum	9.3	8.5	17.8
Average	17.3	12.7	31.0

Twenty-three oat plats were also threshed. The maximum yield of these oats was 49.8 bus., and the minimum yield, 13.7 bus.

Results obtained from pasturing spring pigs on rotations 65 and 69 are as follows:

Rotation 65.

Dates	No. of days	No. of pigs	Weights		Gain			Lbs. corn fed	Net return per acre.
			Initial	Final	Total	% daily	per day per pig		
7/8-7/18	10	10	599.5	666.5	67.0	1.08	.67	120	$ 13.96
7/18-7/28	10	*9	609.0	658.0	49.0	.77	.544	122	8.84
7/28-8/7	10	9	658.0	701.5	43.5	.656	.435	130	6.98
Totals					159.5			372	29.78

Rotation 69

7/8-7/18	10	10	609.0	663.5	54.5	.845	.545	122	$ 10.38
7/18-7/28	10	*8	521.0	585.5	64.5	1.480	.645	104	13.90
7/28-8/7	10	8	585.5	638.5	53.0	.852	.53	117	10.16
Totals					172.0			343	34.44

*One pig was removed at this time from rotation 65 and two pigs from rotation 69 as pasturage seemed insufficient for all 10 pigs.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Shoshone.

During the week ending July 29, 20 farms were visited, 6 men called at the office, 2 other conferences were held, and a herd of hogs were weighed in a feeding test.

Mr. Hansen spent one day on the Project, looking over the grass pasture tests and discussing them with the farmers. Most of the tests have good prospects of success.

A hog feeding test was completed on the farm of J. L. Werts.

During the week ending August 12, 13 farm visits were made, 5 men called at the office, 5 other conferences were held, 12 cows were tested in one herd, and a cooperative demonstration started in keeping records of the net production of the cows in a herd.

Care of bulls was discussed with 3 men. One of these men has a well bred Holstein bull, and uses him for a good deal for outside service. Methods of handling the bull to avoid disease and to keep him in condition were discussed. There are many men in the vicinity of the owner of this bull who have only one or two cows and want to breed to a well bred bull. It seems that it is quite an advantage to the community for this man to allow the use of his bull, so long as contagious abortion is not prevalent, rather than for him to refuse and force the men to keep an inferior bull calf to freshen their cows, with the idea of castrating him when young enough that he can be sold for a steer.

Milk records were discussed with 5 men. As the annual summaries are made out for each cow at the close of her lactation period, she is given credit not only for her butterfat but also for her skim milk, calf, fertilizer, and increase in value; and is charged not only with her feed, but also with labor,use of equipment, interest, insurance, depreciation and service fees.

Feeding cows was discussed with 5 men. Three of the herds are getting nothing but alfalfa hay, one herd is herded on sweet clover along the ditch banks in the roads, and one in on brome grass pasture and receives alfalfa silage daily.

Grass pastures were discussed with 2 men who are using old pastures and with one man who wants to make a test next year.

The care of manure was discussed with 2 men. One of these men who has all of his farm in grains, is hauling manure from town now and stacking it in his lots, with the intention of spreading it when the grain is cut.

Shipping in cattle and dairy barn construction were each discussed with one man and the management of the creamery was discussed with the manager.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone (continued).

Hog feeding was discussed with 3 men and hog house construction with 5 men.

The Project Fair was discussed with 2 men.

Sudan grass as roughage for cows was discussed with one man who has a small patch which he sowed as a test.

The possibilities and methods of a specialized chicken business were discussed with one man who is considering going into the business.

Boise.

One day of the week ending August 5 was spent with Prof. Ellington, of the Dairy Department, of the University of Idaho.

One herd of hogs was weighed before they were turned into a field of peas and wheat seeded at the rate of 60 pounds of peas and 50 pounds of wheat per acre. The herd consisted of 118 head of shoats averaging about 70 pounds. There are approximately 9 acres in the field on which it is estimated there is 50 bushels of grain per acre, or 40 bushels of wheat and 10 bushels of peas (Canadian field). The hogs have been on alfalfa without grain and are not in the best of condition.

Plans for a half-monitor hog house were furnished to J. W. Brandt, and plans for a 10-cow dairy barn were furnished to H. A. Merritt.

During the week ending August 12, 34 shoats on the Caldwell Experiment Farm were weighed and turned into an acre of peas. The crop is poor, however, being on land poorly adapted to peas. When the peas are finished the pigs will again be weighed and turned on an acre of peas and wheat.

The Directors of the Grazing Association met at Meridian on the 7th. D. R. Hubbard, President of the Association, who has recently returned from Washington, D. C., reported that he has conferred with officials in Washington in regard to the possibility of placing Idaho public lands under the Forestry Service, but that there seems to be no immediate prospect of this being done. Plans for grazing cattle cooperatively on the Boise Forest Reserve next year were discussed.

Tieton.

During the week ending August 5, 15 farms were visited, 10 office conferences were held with farmers, 9 calls for assistance were re-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

ceived. Silos were discussed with 10 farmers, and bills for material were furnished 6 farmers. Dairy records were discussed on two visits and 9 animals were vaccinated against blackleg on 2 farms.

Price paid for prime hogs and butterfat remain unchanged. The local buyers are offering about ten dollars per ton for baled alfalfa hay on board cars. One first crop sold for $10.50. Three baling outfits are now at work on the Project, and considerable hay will undoubtedly be sold within a month.

Uncompahgre.

During the week ending August 19, 15 farm visits were made. Ten requests for service and information were received. The second weighing of the pigs on the farm of Mr. Nash was completed.

A part of the week was spent in assisting the Fair Association in the arrangements for the live stock show in connection with the Fair to be held at Montrose September 19, 20, 21 and 22.

Assistance has been given the local leader in pig club work and several visits were made in this connection.

There is an increasing interest in the erection of concrete silos on the Project. The greatest difficulty in this connection is the matter of forms. One of the local dealers in cement has been interested in the matter of constructing forms and renting them to the farmers.

Hog prices are 10 cents at Denver at present. The farmers are planning to market their spring litters in September.

Butterfat prices are at 29¢ locally.

Grains are high for the feeding of hogs. Corn prices are 2¢ with wheat at the same figure. Barley is bringing $1.60 per cwt. With the high grain prices a great deal of tankage is being fed.

There has been a number of inquiries for feeder lambs by the farmers and letters have been sent out to obtain information in regard to the supply and prices. Many of the lambs in this Valley are obtained in Utah and Wyoming.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Yuma.

During the week ending August 13, the maximum temperature was 108; minimum temperature, 54; greatest daily range, 46. Twenty-nine acres were irrigated.

Extra labor was employed for hoeing. Much cultivating was done.

Alfalfa on borders C-39, 40 and 41 was harvested, and borders D-19, 21 and 23 were renovated.

Dwarf milo was planted on C-36 and 37, and feterita on C-38. A late summer planting of seven varieties of squash and pumpkins was made on A-16 and 17 between the date rows.

The seven varieties of pasture grasses growing on D-15 have made very little growth during the summer. While none have died out completely, a partial dying has occurred in all varieties. These grasses have been watered every other week during the summer season and do not seem to have suffered at any time from drought. Summer condition of the best of these grasses ranks them as follows: Bromus inermis, meadow fescue, orchard and fall oats, alsike clover.

During the week ending August 19, the maximum temperature was 102; minimum temperature, 56; greatest daily range, 43. Thirty-nine acres were irrigated. Weather for the past two weeks has been unusually pleasant for the month of August.

Routine cultivating and hoeing continued throughout the week, extra labor being carried over for the latter work.

Barley straw was secured for mulching the date rows on A-16 and 17. Broad furrows were thrown out on either side of the rows, and about 10 inches of mulch applied along the row, with the idea that the moisture will be much more advantageously conserved for the young palms and bermuda grass will be kept from becoming established.

Of the 458 seedling palms set out in 1911, 124 flowered this spring, covering a flowering date from February 25 to May 1. Of this number, 102 were staminate and 22 pistillate. These were the first flowers produced on 71 of these palms.

Field stakes were completed for all field crops and orchards and set in position this week.

A part of the plants in the chrysanthemum test were cut back to about 6-inch stems to test the effect on fall blooming.

Ten varieties of sorghum were planted on A-14-7. Plat A-10-5 was replanted to hemp as there was no germination made from the first planting, although the seed is known to be fertile.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued).

Miscellaneous millets and legumes were harvested from variety tests on A-15-3, D-10, 11, 12 and 13.

Roguing of Durango cotton was completed during the week. Two fields of good Durango stock on the Project were also rogued.

Nearly all cotton on the Project at present points to very good yields except fields that have been over-watered during early growth.

Scottsbluff.

During the week ending August 19, the second cutting of alfalfa was put up. This was really the third cutting, as the first cutting was hailed out. The alfalfa yielded very well, and the hay was gotten up in fairly good shape.

The land on which the winter wheat was planted last year, and which will be included in the pastures for the coming year, has been prepared and seeded to grass mixtures. This area will include the nine plats for frequency of irrigation.

B-VI has been seeded to grasses. This includes the grass mixtures, as outlined last spring, known as Mixtures, Nos. 1, 2 and 3. B-II has also been put in shape, and will be seeded as soon as possible.

Very little threshing has been possible as yet on account of the unsettled weather.

Truckee-Carson.

During the week ending August 12, the maximum temperature was 94; minimum temperature, 44.

The wheat varieties on the W. H. Williams' ranch were harvested on the 8th.

All fields on the farm were irrigated. Work was also continued on the leveling of field B.

During the week ending August 19, the maximum temperature was 89; minimum temperature, 36.

Fields E-4 and D-4, which were in sweet clover were plowed, a good crop of the clover being turned under.

The wheat varieties on the ranch of Tom Dolf were cut and shocked. Little Club was a little green, while the Gherka was shattering badly.

Truckee-Carson (continued).

A hard wind storm occurred on the 17th, and was followed by a sudden drop in temperature. Minimums of 37 on the 18th, and 36 on the 19th, were recorded. A few melon vines, squashes, and tomatoes were slightly nipped by frost, but no damage was done. One case was reported where an entire melon crop was severely damaged. This weather was very unusual, as never before since the station was established has so cold a spell come as early in the season.

On August 5, seven of the pigs in Lot II were removed from the pasture as the alfalfa was being grazed too closely. The ten pigs left in this pasture have continued to make fairly good gains.

The total weight of pigs in Lot I is now 819 pounds, or 3276 pounds of pork per acre. This is really a little more than the pasture can carry, and three or four pigs will probably be taken off in a week or so. The cool weather has slowed up the growth of the alfalfa, and has prevented it from keeping up with the hogs. Following is the summary of pasture results for the past two weeks.

I T E M .	Pigs on alfalfa pasture. Area,.25 acre. Period,Aug. 5 to Aug. 19: 14 days. Lot I	Pigs on alfalfa pasture. Area,.53 acre. Period,Aug. 5 to Aug. 19: 14 days Lot II
Number of pigs.....	10	10
Initial weights, lbs.	767	872
Final weight, lbs.	819	969
Total gain, lbs.	52	97
Daily gain, lbs.	3.7	6.9
Daily gain, per cent.	.47	.76
Barley fed, lbs.	218.1	249.0
Cost of barley @ $1\frac{1}{2}$¢	$3.27	$3.74
Value of gain @ 7¢	$3.64	$6.79
Net return.....	$ .37	$3.05
Net return per acre.....	$1.48	$5.82
Daily net return per acre...	$.105	$ .42

San Antonio.

During the week ending August 19, the maximum temperature was 98; minimum temperature, 70; greatest daily range, 28. Considerable wind movement helped to make it very pleasant during the first

San Antonio (continued).

part of the week in comparison with conditions during the previous few weeks. On Friday night an unusual wind storm occurred. The high wind continued from about eight o'clock Friday evening until Saturday morning. The wind was accompanied by a rain of 1.02 inches. Much damage was done throughout the entire section by damaging buildings, blowing down trees and blowing out cotton. A few trees on the station were blown down, and much cotton was blown out on the ground. Very little damage was done to the station buildings.

Field work was carried on without interruption the first five days of the week. Plowing of corn stubble in the rotation plats was continued, the following plats being plowed: A6-8-10-12-14-16 and 18; B5-14 and 16, and B6-2. Plat B6-4 was plowed and subsoiled. Fallow on C5 was disked. Milo plats in the rotation experiments were disked to kill volunteer milo which had started growth since the rains. Corn plats B6-8-10-12 and 18 were double disked.

Harvesting of corn on the rotation plats was completed on the 21st. In general the yields were low. The only plats which made yields of any consequence were those where the corn was planted on early plowed land, as after oats and corn. In all cases where corn was planted after cotton or sorghum, the yields were extremely low. The highest yields were from plats A6-8, A6-12, and A6-16. These plats are all in two-year rotations of corn and oats, and the land for corn was prepared early the preceding summer as June or July.

Final arrangements for furnishing city water to the farm were made during the week by the City and San Antonio Water Supply Company, and water was turned on Thursday afternoon, August 17.

Dr. H. J. Webber, Director of the Graduate School of Tropical Agriculture, at Riverside, California, and Dr. E. P. Humbert, Plant Breeder in the Texas Station, were visitors on Monday. Both were interested in the general work of the station, and Dr. Humbert was especially interested in the cotton work.

Results obtained from pasturing spring pigs on rotations 65 and 69 are as follows, for the period from August 7 to August 17.

Rotation 65.

Dates	No. of days	No. of pigs	Weights		Gain			Lbs. corn fed	Net return per acre.
			Initial	Final	Total	% daily	per day per pig		
8/7-8/17	10	9	701.5	749.0	47.5	.67	.528	140	$7.70

Rotation 69

8/7-8/17	10	8	638.5	692.5	54.0	.806	.675	127	$10.04

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Huntley.

During the week ending August 12, seventeen farm visits were made.

Cattle were vaccinated for black leg as follows: one for Mr. Jewett, two for Mr. Evans, and three for Mr. McDermand.

A report of the Ballantine cheese factory states that 58,322 pounds of milk containing 2098.60 pounds of butterfat were received during July. The prices to be paid have not been determined as all the July cheese has not yet been sold.

During the week ending August 19, twenty-one farm visits were made. Five head of cattle were vaccinated against blackleg. One calf died before vaccination.

The Ballantine cheese factory, after deducting two cents per pound for making the cheese, paid their patrons 40¢ per pound butter fat for milk delivered during July. This is the price the patrons received at their gates since there has been no charge for hauling to date. Mr. Garvey, of the Ballantine State Bank, donated this much to the association for the first two months. Most of the cheese made during July was sold to one firm at 17¢ per pound, f. o. b. Ballantine. Arrangements were made with this firm to take the future product of the factory at a price practically equal to Wisconsin quotations plus the freight.

Truckee-Carson.

During the week ending August 19, 28 calls for assistance were received, and 12 farms were visited. During the past week unexpected cold weather with light frosts were experienced following a heavy wind. In some parts of the Project the garden truck was damaged.

There seems to be a considerable amount of trouble with impaction in dairy cattle here. In fact, this trouble has persisted throughout the summer. Past experience indicates that this trouble gets more frequent as the weather grows colder. The loss has been very small in cases that have received attention, but very often several days of close attention are required to bring relief, especially when the difficulty is located in the third stomach, which is often the case.

Boise.

Most of the week ending August 19 was devoted to club work and

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

silo work. Construction is to begin as soon as possible on four concrete silos and four of other types, assistance on which has been requested. Concrete silos would have been built in nearly all of these cases if suitable forms were available. There are only a few forms to be had, and as building is generally postponed as late as possible, everyone wants the forms at the same time and some cannot get them. There are no stave silos being built as far as known, practically all of those previously built having proved unsatisfactory.

Tieton.

During the week ending August 12, 27 farms were visited; 6 calls for assistance were answered; 4 office conferenceswere held with farmers; silos, silage, and silage cutters were discussed with 14 farmers; pigs were weighed for feeding demonstrations on three farms; and dairy records were discussed on three visits.

One new pig feeding demonstration in hogging off a field of Bangalia field peas and ball barley was begun. Two boys' litters were weighed for club work. Both of these boys are raising good pigs, but there is a tendency for them to neglect their records.

The first of a series of meetings to be held throughout the Yakima Valley to interest farmers in signing up for sugar beet acreages was held at the Cowichee School House on August 7. There were 85 farmers in attendance, and a small number were interested in the sugar beet crop. No contracts were signed, however, at this time. The meeting at Tieton View on the 9th was not so well attended, and the interest is reported to have been less than at Cowichee.

The local markets for farm products remain unchanged except that prime hogs have reached $9.00 per cwt. Very few pigs are coming to market, and none are known to have come from the Project during the week.

During the week ending August 19, 54 farmers were visited; 6 calls for assistance were answered; milk was tested on 14 farms; one farmer was given assistance in beginning the construction of his silo; and two others requested information in regard to the manner in which to build silo foundations and begin construction. Four silos are now under construction on the Project.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

The corn crop has made very satisfactory growth during the past few weeks, several of the fields now averaging better than 10 feet in height had a few reaching 15 feet. Although the stands are uniformly poor, the prospects for good yields are fair.

The farmers of the Tieton City community requested assistance in organizing a community fair. Fourteen farms were visited one day in this regard, and a working organization was established. Each of the 14 families visited were eager to make the fair a success. The Cowichee and Naches Heights communities will undoubtedly be invited to join in the Project. The corn and pig club boys will be able to show their products about October 1, the tentative date for the community fair. Space has been reserved for a Tieton display at the State Fair, which will begin September 18, but the date will limit the exhibition to small grain, garden stuff, and early fruit and corn.

The local hog market has dropped to $8.50 in accord with an equal drop in coast markets. The butter fat market, however, has risen 5 cents during the week, local creameries now paying 31 cents on the route. Coast buyers who have been through the Valley buying hay are finding a limited quantity for sale at $10 and $11 on board car. A small amount of the first cutting has moved, but a majority of the growers are hopeful of a little better price. Harvesting the second cutting is well under way, and reports are that it is unusually good on many fields.

VEHICLES.

The office estimate for the purchase of horse-drawn passenger-carrying vehicles during the current fiscal year has been disapproved and no allotment made for this purpose. It will therefore be impossible to purchase any buggies during the year.

In this connection, Mr. Allen has on hand at the Umatilla Station a heavy, side-spring buggy with top, pole and shafts, for which he has no special need, and if it can be used at any other farm, arrangements will be made for its transfer upon application.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Huntley.

During the week ending August 26, the maximum temperature was 91; minimum temperature, 45; precipitation, .04 inch.

Threshing of Pringle's Champion wheat grown as a nurse crop in field L, in the experiments in method-of-planting clovers and pasture grasses was completed.

In fields L-I and L-II, on 24 one-quarter acre plats, an experiment in methods-of-seeding red clover, white clover, and alsike clover was started this season . Four methods of planting were used as follows: With wheat as a nurse crop cut for hay, wheat as a nurse crop cut for grain, without a nurse crop, and late summer seeded in wheat stubble. Each clover in each method of planting was planted in duplicate plats. Spring seeding of both wheat and clover was done on April 23. Seeding rate of wheat was one bushel per acre and of clover 10 pounds per acre. Seeding of clover in the wheat stubble was done on August 23. Of the red clover a good stand was secured in the three methods of spring planting, while with the white and alsike clovers the stand was good only on the plats without a nurse crop. On the plats planted to white clover and alsike clover with a nurse crop, only about fifty per cent. of a stand was secured and these plats were reseeded at the rate of 5 pounds per acre on August 27.

Yields of wheat hay and wheat in this experiment are given below:

Plat No.	Variety of clover	Method of planting	Yield			
			Per plat		per plat	
			Grain, lbs.	Hay, lbs.	Grain, bus.	Hay, tons.
L-I-1	Alsike	A	-	960	-	1.92
-2	"	B	605	-	40.3	-
-4	"	C	567	-	37.8	-
-5	White	A	-	970	-	1.94
-6	"	B	576	-	38.4	-
-8	"	C	586	-	39.1	-
-9	Com. red	A	-	1018	-	2.03
-10	"	B	577	-	38.4	-
-12	"	C	494	-	32.9	-
L-II-1	Alsike	A	-	790	-	1.58
-2	"	B	513	-	34.2	-
-4	"	C	680	-	45.3	-
-5	White	A	-	1198	-	2.39
-6	"	B	692	-	46.1	-
-8	"	C	660	-	44.0	-
-9	Com. Red	A	-	1150	-	2.30
-10	"	B	697	-	46.4	-
-12	"	C	627	-	41.8	-

Huntley (continued).

In the table on the preceding page, A indicates nurse crop for hay; B, nurse crop for grain; C, late summer planted in stubble.

In field L-III, an experiment in methods-of-planting pasture grasses was started in the spring of 1916. In this test, three different mixtures were used and each mixture was planted in duplicate on one-quarter acre plats by each of the methods described. Spring seeding of wheat and grasses was done on April 17, and late summer seeding of grasses in wheat stubble was done on August 24.

The mixture used and the rate of seeding of each grass in the four mixtures are as follows:

Mixture No. 1.		Mixture No. 2.	
Grass	Rate per acre, lbs.	Grass	Rate per acre, lbs.
Brome	2	Brome	2
Orchard	5	Orchard	5
Tall fescue	3	Tall fescue	3
Perennial rye	3	Perennial rye	3
Kentucky blue	4	Kentucky blue	4
White clover	2		
Alsike clover	2		
T o t a l	21	T o t a l	17

Mixture No. 3.	
Grass	Rate per acre, lbs.
Orchard	5
Tall fescue	3
Kentucky blue	4
White clover	2
Alsike clover	2
T o t a l	16

In all cases, on the spring planted plats a good stand was secured and there appears to be but little difference in the stand secured on the nurse crop plats cut for hay and the nurse crop plats cut for grain.

The plats planted without a nurse crop were clipped three times during the fore part of the season to keep down the weeds, and at the present time are in good condition for pasturing, the grasses being about 8 inches to 10 inches in height.

The yields of wheat and wheat hay on the nurse crop plats in

Huntley (continued).

this test were as follows:

Plat No.	Method of planting	Mixture No.	Yield per plat Grain, lbs.	Yield per plat Hay, lbs.	Yield per acre Grain, bus.	Yield per acre Hay, tons.
L-III-1	A	1	-	988	-	1.97
-2	B	1	450	-	30.0	-
-4	C	1	524	-	34.9	-
-5	A	2	-	988	-	1.97
-6	B	2	610	-	40.7	-
-8	C	2	608	-	40.5	-
-9	A	3	-	984	-	1.97
-10	B	3	572	-	38.1	-
-12	C	3	581	-	38.7	-
-13	A	1	-	1288	-	2.57
-14	B	1	595	-	39.7	-
-16	C	1	565	-	37.7	-
-17	A	2	-	840	-	1.78
-18	B	2	487	-	32.4	-
-20	C	2	443	-	29.5	-
-21	A	3	-	670	-	1.34
-22	B	3	449	-	29.9	-
-24	C	3	425	-	28.3	-

(A) Nurse crop for hay.
(B) Nurse crop for grain.
(C) Late summer planted in stubble.

Visitors during the wee were N. C. Donaldson, LeRoy Moomow, and Geo. W. Morgan, of the Department. On August 17, the officials of the Great Western Sugar Company, and about 20 farmers from the irrigation projects near Great Falls visited the farm. It is expected that a sugar factory will be built somewhere near Great Falls in 1917, and these men spent several days in the Billings factory district making a study of sugar beet growing.

Irrigated Rotations.

Roadways, alleys and headlands were hoed.

Potato plats in fields K and L-IV were irrigated for the third time.

Sugar beets in L-IV were also given the third irrigation.

Straw was returned to the wheat plat, rotation 7, and disked under.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Huntley (continued).

Harvesting of oats, wheat, flax, and second cutting of alfalfa was completed during the week ending August 19.

The gains made by the spring pigs on alfalfa pasture, field K, for the 10-day period ending August 19, are given below:

Spring pigs-Alfalfa pasture & 2% corn. Rotation 67.

No. of hog.	No. of days	Initial weight	Final wt.	Gain	Av. daily gain	% daily gain
76	10	66	73	7	.7	1.01
77	10	62	69	7	.7	1.09
78	10	56	61	5	.5	.84
79	10	53	57	4	.4	.73
80	10	52	61	9	.9	1.58
81	10	71	78	7	.7	.92
82	10	54	60	6	.6	1.07
83	10	52	62	10	1.0	1.76
Total		466	521	55	5.5	9.00
Average		58	65	7	.7	1.12

Corn consumed.....104.2 lbs.
Daily return per acre.....$1.12.

The gains made by the sheep on pasture grasses, field B-V, for the 10-day period ending August 19, are as follows:

Ewes and lambs-1/2 acre pasture: Field B-V.

No. of sheep	No. of days	Initial weight	Final weight	Gain
		Ewes.		
66	10	119	125	6
68	10	137	138	1
70	10	117	118	1
74	10	119	119	0
Total	10	492	500	8
Average		123	125	2
		Lambs.		
67	10	101	106	5
69	10	105	108	3
71	10	94	107	13
73	10	96	102	6
Total	10	396	423	27
Average		99	106	7

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Scottsbluff.

During the week ending August 26, alfalfa was seeded in the stubble on field A, series I and II.

Considerable threshing was done during the week. All of the dry land grain and all the barley and wheat varieties on the irrigated land, and the wheat on field K has been threshed. Unsettled weather has interfered somewhat with the threshing.

San Antonio.

During the week ending August 26, the maximum temperature was 94; minimum temperature, 70; greatest daily range, 31. The entire week was clear and field work was carried on throughout the week without interruption.

Plowing of corn plats in the rotation experiments was completed and plowing of corn stubble on field C5 was started. All fallow plats and fields were harrowed. Part of field C6 was double disked. Orchards were cultivated. Picking of cotton in the rotation experiments was started and carried on throughout the week. It has been difficult to secure extra pickers, and it has been necessary to use regular help for the work. Hauling of sorghum hay from the rotation plats was started.

Yuma.

During the week ending August 26, the maximum temperature was 103; minimum temperature, 61; greatest daily range, 38. Thirty acres were irrigated.

Straw mulching was placed around dates on A-17 and part of A-25.

The hoeing of borders, ditches, road plantings of date and eucalyptus, and the irrigation system was continued during the week.

The deciduous orchard in field B, and dates on A-16 and 17 were disked. Alfalfa plats C-23 and D-20 were harvested. Pecans on F-1 were plowed and hoed. A-15-2 sorghum was thinned.

Ten acres of miscellaneous crops and nurseries were cultivated.

A planting of Durango cotton was rogued for a settler in Yuma Valley.

Belle Fourche.

During the week ending August 26, the maximum temperature was 90; minimum temperature, 42; precipitation, .55 inch.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Belle Fourche (continued).

All the alfalfa in field A was irrigated during the week, and threshing in field A and the fall irrigation experiment was completed. The threshing of the variety grains was commenced. So far the yields have been light, and the grain of rather poor quality. The plowing of plats in grain on the irrigated rotations has been commenced.

The results obtained from pasturing spring pigs on rotations 65 and 69 are as follows:

Rotation 65

Dates	No. of days	No. of pigs	Weights		Gain			Lbs. corn fed.	Net return per acre.
			Initial	Final	Total	% daily	per day per pig		
7/8-7/18	10	10	599.5	666.5	67.0	1.08	.67	120	$13.96
7/18-7/28	10	*9	609.0	658.0	49.0	.77	.544	122	8.84
7/28-8/7	10	9	658.0	701.5	43.5	.656	.435	130	6.98
8/7-8/17	10	9	701.5	749.0	47.5	.67	.528	140	7.70
8/17-8/26	9	**7	575.0	617.5	42.5	.79	.674	115	7.30
Totals	49				249.5			627	$44.78

Rotation 69

7/8-7/18	10	10	609.0	663.5	54.5	.845	.545	122	$10.38
7/18-7/28	10	*8	521.0	585.5	64.5	1.480	.645	104	13.90
7/28-8/7	10	8	585.5	638.5	53.0	.852	.53	117	10.16
8/7-8/17	10	8	638.5	692.5	54.0	.806	.675	127	10.04
8/17-8/26	9	**7	607.5	656.5	49.0	.85	.777	122	8.84
Totals	49				275.0			592	$53.32

*One pig was removed at this time from rotation 65, and two pigs from rotation 69.

**Two pigs were removed from rotation 65, and one pig from rotation 69 on August 17.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Huntley.

During the week ending August 26, 8 farm visits were made; 1 call was received to treat a cow for sterility; 2 farmers were advised regarding seeding pastures this fall; 2 farmers were assisted in vaccinating 29 calves; and 3 farmers called at the office.

Minidoka.

During the week ending August 12, Mr. Sessions, Professor of Agriculture at the Idaho Technical College, visited the project and spent one day visiting farmers who had made requests for assistance along the line of crop production. Mr. Ellington, Professor of Dairying at the University of Idaho, spent one and a half days visiting the cheese factories and farm dairies.

Because of the late and cold spring, with the freezing weather and sand storms, the crops are hardly up to the average this year. Prospects for good prices are bright, so the farmers are not discouraged. Because of the demand and the high price being offered for hay there will be but little, if any, increase in dairying as many who had considered going into this line of farming will not do sothis year, while a few are offering their cows for sale. The good dairymen owning the pure bred and good grade cows are not contemplating a change. The interest in dairying is much better in the two districts where there are cooperative cheese factories than elsewhere.

Butter fat is 29 cents. Hogs are $7.60. Wheat is $1.80 per cwt.

During the week ending August 19, a call to inspect sheep for some infection was received from one of the veterinarians at Burley. The trip was made with Dr. Sims, Deputy State Veterinarian, and Mr. McDonald, an inspector in the Bureau of Animal Industry. A bad case of lip and leg ulceration was found at the yards of the Portland Feeder Company. One carload of lambs shipped in from Oregon had broken out with the infection after their arrival. The ewe lambs, 91 in all, had been sold to three farmers on the North Side, where they had been put into a cooperative range band, and sent to the open range northwest of the Project. All were infected. They were cut out, brought back to the farm and treated with the nitric acid treatment. 1030 other sheep had been exposed in the cooperative range band.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Minidoka (continued).

Dr. Sullivan spent one day on the Project working out plans for the hog cholera control work, and Mr. Fawcett spent one day visiting the seed growers and answering requests which had not been answered during his previous visit. The yield of red clover seed will be cut down because of the clover aphis. A severe wind and sand storm on August 17th did much damage to the harvested alsike by rolling the piles and shattering the seed.

During the week butter fat went to 31 cents. As all the cream is shipped out, there is a deduction of one cent for each pound of cream, that is, if the total weight of the cream shipped is 80 lbs., there is 80 cents deducted from the shipper's check to pay the shipping charge and the expense of receiving. Wheat advanced to $1.95 per cwt. The only hogs that have gone out this month are stock and serum hogs at $7.50.

Uncompahgre.

During the week ending September 2, 13 farm visits were made, and 11 requests for service and information were received. Conferences were held with 7 other farmers.

The weather has been somewhat rainy during the week, so that the roads have been quite muddy on two days. There has been a great deal of alfalfa damaged by the excessive rainfall of the summer. A number of farmers held their second cutting so long that there is little prospect of getting a third cutting.

The local creamery has still a shortage of cream for making butter, and as a result are not able to furnish enough for their customers. The price paid for butter fat is 32¢.

The third period of the test of the pigs in feed on the farm of R. C. Nash was completed on the 2nd of September. The 41 pigs had made an average gain of 25 pounds in the 14 days. They were run on alfalfa pasture and fed 6 pounds of ground barley daily. They were fed a total of 57 pounds of tankage during the period. The amount of grain consumed per 100 pounds of gain was 342. The feeder has realized a profit over cost of grain amounting to $43.57, figuring the market prices for pork and feed.

Arrangements have been made to conduct a test on 90 pigs on the farm of the local veterinarian.

Hog prices are very inviting at present, the Denver market quoting a price of $10.85. Many of the farmers are planning to ship the

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

latter part of this month. Wheat is bringing 2¢ at present, and corn is from $1.80 to $2.00 per cwt.

The corn fields are nearly ready for the silos. There are a number of new silos to be filled this season. The wood stave and cement stave are most numerous.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending September 2, the maximum temperature was 94; minimum temperature, 63; greatest daily range, 31. Frequent showers occurred during the first days of the week and interfered to a great extent with cotton picking and other field work. The total precipitation was .88 inch.

Cotton picking was continued when weather permitted. With the exception of one plat, the first picking of cotton in the rotation experiments was completed. Grass and weeds in waste places were mowed. The farm roads were disked and weeded, and plowing of C4 was continued. Corn in the Corn Growers' variety test on field C4 was harvested.

Dr. D. A. Saunders, of Greenville, visited the station on the 31st of August. Messrs. O. F. Cook and H. F. Loomis arrived on August 30, to remain at the station for several days.

Scottsbluff.

During the week ending September 2, the alfalfa and the new seeding of grasses were irrigated. Several men were employed in cutting weeds along the fences and ditches, and some new cement checks were put in.

Practically all of the threshing was completed during the week, with the exception of the oats in field K, which were too green to be threshed at this time. The following yields were secured from the spring wheat that was seeded in duplicate plats:

Variety	Acre basis. Straw, Pounds	Grain, Bushels
Marquis	494.97	13.36
Dicklow	1131.36	4.71
Galgalos	1131.36	12.18
Rysting Fife	1060.65	11.79
Defiance	1272.78	9.04
Ghirka	1367.06	12.57
Sambahara	1461.34	12.96
Ble Dur	919.23	13.35
Kubanka	895.66	17.28
Arnantka	989.94	23.57
Beloturka	989.94	14.53

Scottsbluff (continued).

Dairy Report of the Scottsbluff Station for the Month of August.

The cows held up fairly well during the month of August. One matter that is rather puzzling is the decrease in the tests of the cows. In the early part of the summer the milk of both Mable and Marie tested 3 per cent. and better; last month this test dropped down to below 3 per cent. There is no accounting for this as they received practically the same attention as they had early in the season.

Efforts have been made to secure some good grade cows, but farmers owning such cows refuse to sell. It is hoped that it will be possible to purchase three cows before fall.

The following table shows the results of the dairy work for the month of August:

	Butter Fat.				Skim Milk.		
Milk Lbs.	Av. Test	Total Pounds	Market Price	Value of	Total Pounds	Market Price	Total Value
Mable 808.5	2.8	22.64	27¢	$6.11	687.23	25¢	$1.72
Marie 770.35	2.7	20.79	27¢	5.61	654.80	25¢	1.64
Maud 619.9	3.5	21.69	27¢	5.85	526.92	25¢	1.32

During the week ending September 9, posts for fence around the sweet clover on B4 were constructed. The stand has recovered considerably, and it is hoped that a good pasture will be obtained from this plat.

Threshing was completed with the exception of the flax in field K. This flax is still in flower, and it will be some time before it is ready to cut. It is likely that frost will occur before this flax is ready for cutting.

Several men were employed in irrigating. It is hoped to cover the great portion of the land before the water is turned off about October 1.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Scottsbluff (continued).

The following yields were obtained from the oat varieties:

Variety	Acre basis. Straw, Pounds	Grain, Bushels
Iowa No. 3	2875.54	80.65
Canadian	2474.85	65.55
Big Four	1991.66	71.81
Kherson	3005.17	82.86
Garton's No. 5	2309.86	46.77
White Plume	2309.86	64.81
National	2521.99	78.44
Golden Rain	3299.80	82.49
Danish	3464.79	61.87
Swedish	3995.11	64.45
New Market	3181.95	77.00
Wisconsin No. 1	4289.74	85.07
Dakota No. 4	3617.99	58.92
Rust Proof	2533.77	35.72
White Russian	2710.50	33.51

Yuma.

During the week ending September 2, the maximum temperature was 108; minimum temperature, 60; greatest daily range, 47. Thirty-nine acres were irrigated.

Two extra men were employed during the week in hoeing borders and irrigation system.

C-27(row plantings of seven strains of Indian alfalfa)was harvested for seed. E-5-6 (Sudan grass) was harvested for hay; D-15 (grass planting) was clipped. Plats A-13-3 and A-26 were plowed; also, Bermuda grass from fig orchard. The B orchard and various nursery and small crops were hoed. Grain sorghums on C-6 and 7, D-6 to 9, E-3 and 4, cotton on D-25 and 26, and four acres of small plats were cultivated. The farm grounds were mowed and all ornamentals hoed clean from Bermuda grass. Arrow-weeds in the B pasture were cut down. The water supply tank was cleaned. A broadcast planting of hemp was made between date rows on C-43. Hemp was also planted for the third time on A-10-5. The first planting failed

Yuma.

to germinate and the second was destroyed by a heavy deposit of silt in the irrigation water.

One-half of B-19 (Pearl Millett sections) was harvested to determine the green and dry weights.

Mr. H. N. Vinall, of the office of Forage Crop Investigations, visited the station on September 1 and 2.

Umatilla.

During the week ending August 12, the maximum temperature was 92; minimum temperature, 49; precipitation, .08 inch.

In addition to the regular work of irrigating and making soil moisture observations, weeds were hoed from fields D4, D5 and from along the roads.

The older apple orchards on the Project are beginning to produce, and considerable interest is manifested in the prospect for a good crop. Peaches and pears have no fruit; the few prune and plum trees in the home orchards are producing well. Grapes are light and late owing to the crop being from second growth following heavy spring frosts.

During the week ending August 19, the maximum temperature was 94; minimum temperature, 40;precipitation, trace.

The third crop of hay was harvested. Although the weather remained cool during the entire growing season, the crop was heavy and of excellent quality. A good third cutting is reported from over the entire district. No showers of consequence occurred and as there was little wind the crop was put up without interruption.

During the week ending August 26, the maximum temperature was 100; minimum temperature, 40.

Some grading and brushing was done on the road between the station and town.

Ryeand vetch were disked in in the south half of field C2, and a part of it was irrigated.

A number of undesirable sorts of trees were removed from the nursery, and others were thinned in order to prevent their crowding.

Work was begun on the laying of pipe for the sprinkler system that is to be placed in field B2b.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Umatilla (continued).

During the week ending September 2, the maximum temperature was 101; minimum temperature, 53.

The remainder of the pipe was laid, holes drilled for nozzles and the sprinkler system partly put into use on B2b. One line of pipe, with the Manaway system of strainers and nozzles (C. W. Skinner, Newfield, N. J.),was installed, and two of the Skinner System of Irrigation, sold by the Skinner Irrigation Co., of Troy, Ohio.

The force of the water is much greater than was anticipated from the fall under which they are working. The streams appear to be quite small for use here on account of the degree of dessication of the air, therefore, considerable endeavor will be made to determine what success will be had with larger streams of water, and with varying distances between lines of pipe.

One line of pipe with rotary sprinklers is to be installed soon to use in comparison with the system briefly described. Alfalfa will be sown on the land as it is raw and could not be used to advantage for garden truck at this time.

Field A2 was sown to vetch, the seed being put in the stand of sudan grass now on the ground.

Field D1 was regraded and a ditch put in to replace the old wooden flume.

Belle Fourche.

During the week ending September 2, the maximum temperature was 93; minimum temperature, 46; precipitation, .04 inch.

On Monday, Mr. Lyman, County Agent for Lawrence County, together with about thirty farmers, visited the station. The work of the week was threshing, fencing corn plats in rotation 69 and 71, and cleaning up weeds.

During the week ending September 9, the maximum temperature was 98; minimum temperature, 46; precipitation, .01 inch.

All threshing was finished except the nursery and the alfalfa seed. The seed in field I was irrigated and all pastures and fall seeded alfalfa.

One four-horse team has been busy plowing all week and two teams were employed part of the time.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Belle Fourche (continued).

Results obtained from pasturing spring pigs on rotations 65 and 69 are as follows:

Rotation 65

Dates	No. of days	No. of pigs	Weights Initial	Weights Final	Gain Total	Gain % daily	Gain per day per pig	Lbs. corn fed	Net return per acre
7/8-7/18	10	10	599.5	666.5	67.0	1.08	.67	120	$ 13.96
7/18-7/28	10	*9	609.0	658.0	49.0	.77	.544	122	8.84
7/28-8/7	10	9	658.0	701.5	43.5	.656	.435	130	6.98
8/7-8/17	10	9	701.5	749.0	47.5	.67	.528	140	7.70
8/17-8/26	9	**7	575.0	617.5	42.5	.79	.674	115	7.30
8/26-9/7	12	7	617.5	662.5	45.0	.61	.536	148	6.68
Totals	61				294.5			775	$ 51.46

Rotation 69

7/8-7/18	10	10	609.0	663.5	54.5	.845	.545	122	10.38
7/18-7/28	10	*8	521.0	585.5	64.5	1.580	.645	104	13.90
7/28-8/7	10	8	585.5	638.5	53.0	.852	.53	117	10.16
8/7-8/17	10	8	638.5	692.5	54.0	.806	.675	127	10.04
8/17-8/26	9	**7	607.5	656.5	49.0	.85	.777	122	8.84
8/26-9/7	12	6	557.5	590.0	32.5	.51	.451	134	3.74
Totals	61				307.5			726	$ 57.06

*One pig removed at this time from rotation 65 and two pigs from rotation 69.

**Two pigs removed from rotation 65 and one pig from rotation 69 on August 17.

Results obtained from pasturing ewes and lambs on rotation 71 and sheep on triangular plat at south end of series II, are as follows:

Rotation 71

Dates	No. of days	No. of sheep	Weights Initial	Weights Final	Gain Total	Gain % daily	Gain per day per sheep	Net return per acre
6/10-6/21	11	12	731.0	760.5	29.5	.37	.27	$ 8.26
6/21-7/3	*							
7/3-7/13	10	6	387.5	405.0	17.5	.476	.29	4.90
7/13-7/24	11	6	405.0	413.0	8.0	.155	.133	2.24
7/24-8/3	10	6	413.0	419.0	6.0	.124	.100	1.68
8/3-8/14	11	6	419.0	426.5	7.5	.14	.114	2.10
8/14-8/24	10	6	426.5	426.0	-0.5		-.008	-.14
8/24-9/2	9	6	426.0	419.5	-6.5		-.12	-1.82
9/2-9/6	4	6	419.5	419.5				
Totals	76				61.5			$17.22

*Sheep were not on pasture during this period.

Field Notes.

Belle Fourche (continued)

Rotation A II

Dates	No. of days	No. of sheep	Weights Initial	Weights Final	Gains Total	Gains % daily	Gains per day per sheep	Net return per acre
5/29-6/8	10	10	1419.5	1466.5	47.0	.28	.47	$ 3.29
6/8-6/17	9	10	1466.5	1446.5	-20.5			-1.44
6/17-6/27	10	10	1446.0	1498.5	52.5		.525	3.675
6/27-7/7	10	10	1498.5	1467.5	-31.0			-2.17
7/7-7/18	11	10	1467.5	1538.0	70.5	.452		4.94
7/18-7/28	10	10	1538.0	1529.5	- 8.5			- .60
7/28-8/7	10	10	1529.5	1512.5	-17.0			-1.19
8/7-8/17	10	10	1512.5	1528.5	16.0	.092	.16	1.12
8/17-8/28	11	10	1528.5	1553.5	25.0	.126	.227	1.75
8/28-9/7	10	10	1553.4	1576.0	22.5	.126	.225	1.57
Totals	101				156.5			$10.95

Ten spring lambs, averaging 66.4 pounds each, were turned into the third crop of alfalfa on A-II-35 and the corn on A-III-33 in rotations 71, on September 7. All sheep were taken from Plat A-II-36 for the remainder of the season.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Shoshone.

During the week ending August 19, 4 farms were visited, 2 men called at the office, 8 other conferences were held, 6 communications were made by letter, 1 circular letter was distributed, 1 meeting was attended and 12 cows were tested in two herds.

Grass pastures were discussed with one man who has a successful pasture which he has been using for several years and with one man who is planning to try one next year.

The shipping in of dairy cattle from Wisconsin in co-operation with farmers from other sections of the state, the proposition to be handled with the assistance of the state dairyman, was discussed with three men and a circular letter was sent to all farmers of the project, explaining the proposition.

A rack for feeding hay to cows was discussed with one man, beef cattle management and dairy management were discussed with one man, and one man was given a demonstration in dehorning calves with caustic potash.

Hog management was discussed with one man, buying hogs with one man, hog feeding with 3 men, and hog house construction with one man.

The project fair was discussed with 3 men and a plan for renting a farm was discussed with one man.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone (continued).

One communication was made by letter concerning hog house construction; one, concerning treatment for plant lice; one, concerning mineral mixture for hogs; one, concerning hog feeding test; one, concerning shrinkage of grain.

During the week ending September 2, 13 farm visits were made, 5 office calls were received, 8 other men were conferred with, one herd of 8 cows was tested and one hog feeding test was completed.

The proposition of shipping in dairy cattle from Wisconsin does not seem to have aroused much interest as only a few men have called about it since the circular letter was sent out explaining the proposition. Several carloads have been shipped in by local men who sold the cows, and these cattle having been bought from dealers were not satisfactory. Many farmers have not the cash, and many hesitate to allow someone else to do their buying, especially since they are not acquainted with prices and market conditions. However, it is probable that a good many men would take one or two calves, if the matter were discussed with them personally.

Several of the men who are cooperating in grass pasture tests are clipping the weeds or cutting the grain, and for the most part the grass is showing up very well.

G. C. Dillavou sold his spring pigs which were being used in a feeding test, so his sale weights were taken as the final weights in a feeding period. The pigs averaged 61.49 lbs. on July 18 and 98.77 lbs. on September 2, having made an average daily gain of .81 lb. on a daily grain feed of 2.69 lbs. The pounds of feed per cwt. gain were 332 lbs., and the cost of feed per cwt. gain, figuring grain at $1.50 per cwt., was $4.98. As the pigs were sold for $8.00 per cwt., the value of the daily gain per pig less feed cost was 2½ cents.

Boise.

During the week ending September 2, Mr. Day's hogs were weighed off a field of peas and wheat containing 3.6 acres of peas, and 1.6 acres of wheat. The wheat was estimated at 50 bus. per acre, and the peas would probably have threshed 25 bus. per acre. The pigs which averaged 32 lbs., when turned into the field, were in 35 days. They made a total gain of 4760 lbs., or 915 lbs. per acre, which at 7¢ is equivalent to$64.05 per acre. The same pigs with 23 smaller ones will continue to have the run of the field and receive ground barley in addition until corn is ready to "hog down", when they will be fin-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

ished on that crop. The hogs at the State Farm were weighed for the second time, and preliminary weighing was made of 26 shoats for Mr. Osgood, of Kuna. They were turned into a field of peas and oats.

Three herds of cows were tested.

Mr. Farrell spent the week on the Boise Project.

Silos, cow-testing, and weighing hogs for feeding tests comprised the greater part of the field work of the week.

During the week ending September 9, 2 days were spent in the office.

Practically all of the field work has been done in connection with silos. Six silos are now under construction, and four more will be begun unless present plans are changed.

Final weighing was made of Mr. Johnson's hogs, after they had been on an acre of crop consisting of approximately 1/2-acre of mixed peas (Canadian field) and beardless barley and 1/2-acre of wheat, for 43 days. Four sows and 16 pigs gained 650 lbs. on the acre of feed, equivalent to a gross return of $45.50 with pork at 7¢.

Tieton.

During the week ending August 26, 4 days were spent in visiting the Seattle and Portland stock yards, the Carnation Dairy Products office and farm near Seattle, and the office of the Supervisor of the Ranier National Forest, at Tacoma. One day was spent at the annual Tieton picnic.

Three farms were visited during the week, 2 of which were answers to calls in regard to building silos, and one in regard to dairy records. A half-day conference was held in regard to conducting a boys' stock judging contest at the State Fair.

Prime hogs advanced to $9.00 per cwt at the local market during the week. The local creameries advanced the price paid for butter fat from 26 cents to 31 cents. The Cowichee creamery and cheese factory is now paying 32 cents for butter fat in cream and 37 cents for butter fat in whole milk. These prices are for butter fat on the farm.

Not a great deal of hay was moved to the market. Reported prices ranged from $10 to $15 per ton for the first class cutting baled. The average price is evidently about $11 on board cars.

Probably the most noticeable development in dairying in the Puget Sound country this season has been the increased attention to the home production of roughages, especially silage and mixed hay. New silos are to be found in great numbers along the road and farmers and busi-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

ness men interested in dairying agree that the coast dairyman does not care to depend upon alfalfa hay at the prices they paid last winter. The State College extension men regard last winter's experience as a distinct benefit to coast dairying in general, although the lesson was very severe in some cases. The silage crops usually grown are corn, small grains, and vetches. Clovers and mixed hays are used to some extent. One very fine field of medium clover, alsike clover, timothy and redtop was seen which would equal a hay crop grown anywhere. Orchard grass and Italian rye grass seems to give excellent results in mixture for hay.

The condensaries are paying $1.65 per cwt. for 3.7 percent milk at present. Inasmuch as nearly all the cows are on pasture, this looks like a good price. The prices for good cows are holding up well although it seems fair to expect that the beginning of the winter months will cheapen them to some extent.

During the week ending September 2, 23 farms were visited, one conference was held with a farmer at the office, 12 calls for assistance were answered, 18 farmers called or were visited in regard to silos, silage and silage feeding.

Mr. Price, the State College Extension dairyman, spent the week on the Project, cooperating in the home-made silo campaign. During the week 3 men were given practical assistance in silo construction.

In a number of cases it has been difficult for farmers to buy material for home-made silos from the local lumber yards. This difficulty seemed due to ignorance of the home-made types in which the farmers were interested, and to a desire sometimes to sell lumber which was on hand, more easily obtained, or unfitted for the particular construction in mind. Also, a number of yards are agents for patent silos and were slow to take advantage of the opportunity to sell a bill of material rather than a ready made silo. Some time was spent with the lumber men, therefore, in discussing the details of the best home-made types and in inspecting the lumber which they had for sale. A trip was made to the Pine Box and Lumber Mill, in the Cowichee Canon, where, due to lack of railroad facilities, lumber is sold at a considerable discount. This mill has sold an inferior lot of lumber to one of the farmers for a silo. In most instances, at least, the companies realize that a large number of farmers want silos and that in most cases the price must be brought within comparatively easy reach. It is now possible for a farmer to go to some of the mills and obtain the correct material for a given type even without the bill of material which has been worked out for them on the farm. Two mills are now furnishing door frames and tighteners at less than the farmer could make them without considerable labor.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

The breeders of pure bred Holsteins report very gratifying sales of pure bred bulls during the past two months. One new bull has been added to the Project herds during August. Local breeders are now sold very short of bulls of serviceable age. In the line of herd improvement, one herd of six Red Polls was traded during the week for five grade Holsteins. The Red Polls have been on test and were found to be decidedly unprofitable.

A meeting of the Neighbors' Club was attended at the Cottonwood Schoolhouse. The Club furnished a short program. Mr. Tiffany, of the Reclamation Service, explained a series of pictures which were taken during construction of this Project, the Sunnyside and the Storage units; Mr. Price, of the State College, talked of the general condition of the dairy business in the state, and of this season's progress; and Mr. . Bean talked of silo construction, using lantern slides for illustrations. Sixty people attended.

Prices paid for farm produce during the week were as follows: Prime hogs, $9.50; choice steers, $5 to $5.50; alfalfa hay, $11, and butter fat, 31 cents. The Cowichee Cheese and Butter Company, however, has advanced the price paid for butter fat in whole milk to 38 cents and is paying 32 cents for fat in cream. The whole milk is running from 3.5 to 3.7, and is therefore paying the farmers from $1.33 to $1.41 per cwt. for milk. The factory is in a district of the Project where considerable pasturing is practiced, thus affording a very nice price above the cost of feed.

The Cowichee Cheese and Butter Company has passed into the hands of the Yakima Meat Company. The capital of the concern has simply changed hands; the same cheesemaker will continue to manage the plant on salary and with a proportion of the earnings. It seems to be the policy of the new owners to branch out with other factories eventually. The Yakima Meat Company has heretofore purchased the entire output of Cowichee cheese, and is wholesaling it through their wholesale meat organization.

FIELD NOTES.

Huntley.

The following tables give the crop yields for oats, wheat, flax and second cutting of alfalfa, harvested during the week ending August 19 from the irrigated rotations.

Oat Yields.

Rotation No.	Plat No.	Bushels per acre grain	Weight per bu., lbs.
1 CC	K-V-21	-	-
16	-2	67.8	34.0
22	-7	94.5	35.0
23	-15	82.3	35.0
24	-10	72.1	35.0
25	-IV-5	87.3	35.0
27	-V-19	45.5	36.0
28	-18	-	-
30	-IV-15	46.9	35.0
31	-III-13	77.3	37.0
32	-IV-18	61.5	35.0
42	-9	91.4	36.0
44	-14	83.5	36.0
60	-III-7	101.6	40.0
61	-1	104.8	38.0
CC	L-IV-1	60.3	34.0
34	-2	56.3	32.0
35	-6	50.6	33.0
46	-10	50.9	32.0
64	-15	58.1	33.0
69	-22	57.8	32.0
Average		71.1	35.0

Wheat Yields.

Rotation Bo.	Plat No.	Bushels per acre grain
3	K-V-23	- *
5	-II-7	21.7
7**	-8	24.8
18	-V-3	32.7
27	-17	- *

* Cut before maturity and straw burned. Badly infested with wild oats.

** Straw returned.

Field Notes.

Huntley (continued).

Flax Yields.

Rotation No.	Plat No.	Bushels per acre
9	K-III-16	7.5
67	-II-1	27.9
Average,	1916....	17.7
	1915....	21.3
	1914....	18.6

Yields of alfalfa, second cutting, 1916.

Rotation	Plat No.	Pounds per plat				Tons per acre			
		spring seeded	Second year	Third year	CC	spring seeded	Second year	Third year	CC
8 CC	K-IV-22				556				1.11
40 C	-1	442				.88			
40 D	-2		650				1.30		
42 C	-7	382				.76			
42 D	-8		746				1.49		
44 C	-11	258				.52			
44 D	-12		762				1.52		
60 F	-III-9	364				.73			
60 A	-10		782				1.56		
60 B	-11			792				1.58	
61 F	-3	462				.92			
61 A	-4		877				1.75		
61 B	-5			990				1.98	
67 F	-II-3	420				.84			
67 A	-4		726				1.45		
67 B	-5	Hogged off.							
CC	-I *				2278				1.55
CC	-II *				2924				1.72
CC	-III *				1882				1.19
46 A	L-IV-13	376				.75			
46 B	-12	404				.81			
64 A	-20	416				.83			
64 B	-19	392				.78			
64 C	-18	424				.85			
69 A	-27	444				.89			
69 B	-26	488				.98			
69 C	-25	520				1.04			
CC	-14	244				.49			
Average		402	757	891		.80	1.51	1.78	1.39

* Triangle.

Field Notes.

Huntley (continued).

Irrigated Rotations.

During the week ending September 2, the following crops were irrigated in field K: sugar beets and spring seeded alfalfa for the third time: second year, third year and continuously cropped alfalfa for the sixth time. The two corn plats in rotation 69, field L-IV, were irrigated to bring on the rape, which was seeded on August 1.

All potato plats in the rotations were sprayed for the fourth time. A second brood of potato beetles was present in considerable numbers on all plats.

The gains made by the spring pigs on alfalfa pasture in field K are given below:

Rotation 67.

No. of hogs	No. of days	Initial weight	Final weight	Gain	Av. daily gain	% daily gain
76	10	73	79	6	.6	.78
77	10	69	74	5	.5	.70
78	10	61	67	6	.6	.91
79	10	57	60	3	.3	.54
80	10	61	67	6	.6	.91
81	10	78	85	7	.7	.84
82	10	60	63	3	.3	.52
83	10	62	69	7	.7	1.09
Total		521	564	43	4.3	
Average ...		65	70	5	.5	

Corn consumed..... 104.2
Daily return per acre..... $.80

The gains made by the eight head of sheep on 1/2 acre pasture of mixed grasses in field B-V are given below:

Ewes.

No. of sheep	No. of days	Initial weight	Final weight	Gain or loss.
66	10	125	122	-3
68	10	138	137	-1
70	10	118	119	1
74	10	119	118	-1
Total		500	496	-4
Average		125	124	-1

Huntley (continued).

Lambs

No. of sheep	No. of days	Initial weight	Final weight	Gain or loss.
67	10	106	104	-2
69	10	108	104	-4
71	10	107	100	-7
73	10	102	95	-7
Total		423	403	-20
Average ..		106	101	-5

The heifer on one-half acre of mixed pasture grasses in field B-V weighed on September 1st 876 pounds, a gain of 14 pounds since August 1st.

During the week ending September 9, the maximum temperature was 92; minimum temperature, 37; precipitation, 1.01 inches.

The drought and warm weather of the past six weeks was broken by a rain of 1.01 inches on September 9. An unusual amount of irrigation was necessary during the season. As a result of this rainfall, further irrigation will probably not be necessary.

Late summer seeded clover and pasture grasses in field L in the methods-of-planting test were given two irrigations after planting. It appears that a good stand of these crops, as well as fall seeded alfalfa, will be secured.

Corn is maturing rapidly and in some cases is past the danger of frost.

The mixed pastures in field A-II-1-2 and 4 are making rather slow growth and it was necessary to begin to give the cows on this pasture a supplemental feed of about 15 pounds of hay per day each on September 8.

A pasture test of individual grasses in field B-V was started on August 9. This field contains three plats each of six grasses and one clover, as follows:- Brome, orchard grass, meadow fescue, perennial rye grass, Kentucky blue grass, tall fescue, and white clover. The plats are 6 x 170 feet in size, so that they contain a total of nearly one-half acre. These grasses were planted in 1915 and in all cases, excepting the Kentucky blue grass, there was a good stand. A crop of hay was cut from these plats on June 28, 1916, and the white clover plats were cut again before the beginning of the test to avoid the danger of bloat. For the purpose of the test, all plats were placed in one enclosure and one cow placed on the lot on August 9. The height of the grasses at the beginning

Huntley (continued).

of the test were as follows: Brome grass, 8 inches; orchard grass, 12 inches; meadow fescue, 10 inches; Kentucky blue grass, --; perennial rye grass, 7 inches; tall fescue, 14 inches; white clover, 3 inches.

The cow showed a decided preference for white clover and brome grass and grazed these plats rather closely, before eating much of the other grasses. Preference for the remainder of the grasses appeared to be in the following order: Meadow fescue, orchard grass, tall fescue, and perennial rye grass. By August 28, very little of the perennial rye grass was eaten, while all of the other plats, excepting tall fescue, were grazed rather closely. Perennial rye grass makes but poor growth during the second season and since it is apparently not readily eaten by stock, it appears that it is not a desirable grass to include in a pasture mixture.

The yields of barley in the variety test in field L are given below:

Plat No.	Variety	Yield. Plat, Lbs.	Yield. Acre, Bushels
L-I-13a	Hanna	266	49.8
15a	Hanna	181	33.9
Average		224	41.8
L-I-14a	Mariout	184	34.5
16a	Mariout	137	25.7
Average		161	30.1
L-II-19a	Smyrna	258	48.4
20a	Smyrna	227	42.6
Average		243	45.5
L-I-13b	Thorpe	208	39.0
15b	Thorpe	135	25.3
Average		172	32.2
L-I-14b	Coast	178	33.4
16b	Coast	198	37.1
Average		188	35.3
L-II-19b	Svanhals	196	36.8
20b	Svanhals	289	54.2
Average		243	45.5

This barley was produced on land that was broken up from native sod in 1914 and cropped to wheat in 1915. Plats were one-ninth acre in size.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche.

The following table shows the yields secured in the fall irrigation experiment. The plats in series II and IV were irrigated late in the fall. Otherwise, the treatment given was identical with that given those in series I and III.

Average yields show a loss for fall irrigation on all crops except wheat. This loss is greater than it should be because the soil in series IV is poorer than that in the other three series. Taking only the first three series into consideration, the yields on fall irrigated land and land not fall irrigated are seen to be practically identical. Only in two cases has there been any marked effect from fall irrigation. In 1914, the wheat yield was materially increased by fall irrigation; in 1915, oats on fall irrigated land were considerably poorer than on land where fall irrigation had not been practiced. The results of the three years' experiments indicate that no benefit is derived from fall irrigation in ordinary seasons.

Wheat.

Plats	Yield per acre, 1916	Average of yields for 1914, 1915, and 1916.
P I	14.3	20.5
P II (fall irrigated)	15.5	23.7
P III	15.3	19.7
P IV (fall irrigated)	13.8	20.5
Average, P I & III	14.8	20.1
Average, P II & IV	14.7	22.1
Gain for fall irrigation	-.1	+2.0

Oats.

P I	73.9	64.6
P II (fall irrigated)	80.6	66.4
P III	84.7	70.9
P IV (fall irrigated)	72.2	57.3
Average, P I & P III	79.3	67.8
Average, P II and P IV	76.4	61.9
Gain for fall irrigation	-2.9	-5.9

Barley.

P I	41.8	37.9
P II (fall irrigated)	39.2	34.7
P III	43.6	34.4
P IV (fall irrigated)	38.3	33.3
Average, P I & III	42.7	36.2
Average, P II & IV	38.8	34.0
Gain for fall irrigation	-3.9	-2.1

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Belle Fourche (continued).

F l a x .

Plats	Yield per acre, lbs.	Average of yields for 1914, 1915 and 1916
P I	12.1	15.3
P II (fall irrigated)	10.4	15.4
P III	11.8	15.2
P IV (fall irrigated)	9.1	12.0
Average, P I & P III	11.9	15.2
Average, P II & P IV	9.8	13.7
Gain for fall irrigation	-2.1	-1.5

Yields of oats in irrigated rotations, 1916.

Plat	Rotation	Preceding Crop	Yield per plat.		Yield per acre.	
			Grain, bus.	Straw, lbs.	Grain, bus.	Straw, tons
A I-5	42	Alfalfa	2.875	148	33.75	.296
III-35	71	do	10.50	469	42.00	.938
I-12	60	Potatoes	12.44	602	49.75	1.204
I-16	30	do	14.00	542	56.00	1.084
I-19	31	Man. Pot.	17.875	708	71.50	1.416
I-35	24	Potatoes	14.50	568	58.00	1.136
I-37	25	Man. Pot.	13.65	773	54.60	1.546
I-41	27	(Rye) Pot.	15.65	539	62.60	1.078
II-16	61	Man. Pot.	20.687	678	82.75	1.356
III-20	44	do	14.60	888	58.40	1.436
I-23	16	Corn	12.31	301	49.25	.602
II-10	62	do	15.90	521	63.60	1.042
II-30	69	Corn (hog)	14.35	561	57.40	1.122
III-10	32	do	15.625	470	62.50	.940
I-30	22	Beets	14.34	541	57.37	1.082
I-32	23	Man. Beets	10.94	550	43.75	1.100
I-43	28	Wheat	6.775	243	27.1	.486
II-20	48	do	14.6	723	58.4	1.446
III-17	65	Flax	18.575	730	74.3	1.460
I-44	1	C C	6.5	173	24.6	.346
III-25	1A	C C	10.405	267	41.62	.534
Maximum	61	Man. Pot.	20.687		82.75	
Minimum	1	C C	6.15		24.6	
Average			13.43	515	53.72	1.031

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche (continued).

Yields of grain in irrigated rotations, 1916.

Spring wheat.

Plat	Rotation	Preceding Crop	Yield per acre. Grain, bus.	Yield per acre. Straw, lbs.	Yield per plat. Grain, bus.	Yield per plat. Straw, lbs.
A I-24	18	Beets	16.1	1792	4.025	448
I-42	28	Oats	6.3	660	1.575	165
II-19	48	Alfalfa	11.1	2012	2.775	503
I-46	3	C C	7.4	916	1.85	229
III-28	3a	do	9.8	1252	2.45	313
I-50	7	C C				
		Ret. straw	7.3	800	1.825	200
III-27	7a	do	12.3	1420	3.075	355
Maximum	18	Beets	16.1		4.025	
Minimum	28	Oats	6.3		1.575	
Average			10.04	1265	2.51	316

Winter Wheat

A-II-25	66	Corn	13.9	1208	3.47	302
I-48	5	C C	7.5	1228	1.88	307
III-29	5a	do	14.3	1180	3.57	295
Average			11.9	1205	2.975	301

Barley

A-II-23	66	Flax	36.25	1900	9.06	475
II-47	X	CC	12.5	760	3.125	190
Average			24.37	1330	6.09	333

Flax

A-II-28	66	Beets	8.43	688	2.11	172
III-16	65	Corn(hog)	8.14	904	2.04	226
I-52	9	C C	3.71	352	.93	88
III-26	9a	do	8.00	872	2.00	218
Maximum	66	Beets	8.43		2.04	
Minimum	9	C C	3.71		.93	
Average			7.07	704	1.77	176

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche (continued).

During the week ending September 16, the maximum temperature was 79; minimum temperature, 28.

The alfalfa in field O and the grounds were irrigated. The forestry was also irrigated.

All plowing in the dry land rotations and all plats in grain in the irrigated rotations was completed and dry land in field O was also plowed.

The work on the new barn is finished with the exception of the stalls and mangers.

Results obtained from pasturing spring pigs in rotation 65 and 69 are given in the following table:

Rotation 65

Dates	No. of days	No. of pigs	Weights Initial	Weights Final	Gains. Total	Gains. % daily	Gains. per day per pig	Lbs. corn fed	Net return per acre
7/8-7/18	10	10	599.5	666.5	67	1.08	.67	120	$13.96
7/18-7/28	10	*9	609.0	658.0	49	.77	.544	122	8.84
7/28-8/7	10	9	658.0	701.5	43.5	.656	.435	130	6.98
8/7-8/17	10	9	701.5	749.0	47.5	.67	.528	140	7.70
8/17-8/26	9	**7	575.0	617.5	42.5	.79	.674	115	7.30
8/26-9/7	12	7	617.5	662.5	45	.61	.536	148	6.68
9/7-9/16	9	5	491.5	515.5	24	.56	.633	88	3.20
Totals	70				318.5			863	$54.66

Rotation 69

7/8-7/18	10	10	609.0	663.5	54.5	.845	.545	122	$10.38
7/18-7/28	10	*8	521.0	585.5	64.5	1.580	.645	104	13.90
7/28-8/7	10	8	585.5	638.5	53	.852	.53	117	10.16
8/7-8/17	10	8	638.5	692.5	54	.806	.675	127	10.04
8/17-8/26	9	**7	607.5	656.5	49	.85	.777	122	8.84
8/26-9/7	12	6	557.5	590.0	32.5	.51	.451	134	3.74
9/7-9/16	9	5	499.0	528.5	29.5	.654	.655	100	4.26
Totals	70				337.0			826	$61.32

* One pig removed at this time from rotation 65, and two pigs removed from rotation 69.

**Two pigs removed from rotation 65 and one pig removed from rotation 69, August 17.

The alfalfa being hogged off on rotations 65 and 69 has made very little growth during the latter part of the last ten-day period. The spring pigs being used were turned into the corn plats on these same rotations which are to be hogged off. Four pigs were put on each quarter-acre plat, averaging as follows: Rotation 65-103.5 pounds each;

Belle Fourche (continued).

rotation 69, plat A II-29, 100 pounds each; plat A II-34, 107 pounds each.

Ten spring lambs, averaging 66.4 pounds, turned into third crop alfalfa on A II-35, and corn on A III-33, rotation 71, Sept. 7. All sheep were taken off plat A II-36 for the remainder of the season.

South end of A II

Dates	No. of days	No. of sheep	Weights		Gains.			Net return per acre
			Initial	Final	Total	% daily	per day per sheep	
5/29-6/8	10	10	1419.5	1466.5	47.0	.28	.47	$ 3.29
6/8-6/17	9	10	1466.5	1446	-20.5			-1.44
6/17-6/27	10	10	1446	1498.5	52.5		.525	3.675
6/27-7/7	10	10	1498.5	1467.5	-31.0			-2.17
7/7-7/18	11	10	1467.5	1538	70.5	.452		4.94
7/18-7/28	10	10	1538	1529.5	- 8.5			- .60
7/28-8/7	10	10	1529.5	1512.5	-17.0			-1.19
8/7-8/17	10	10	1512.5	1528.5	16.0	.092	.16	1.12
8/17-8/28	11	10	1528.5	1553.5	25.0	.126	.227	1.75
8/28-9/7	10	10	1553.4	1576	22.5	.126	.225	1.57
9/7-9/16	9	10	1576.	1674.5	98.5	.69	1.09	6.90
Totals	110				255.0			$17.85

Spring lambs on alfalfa and corn, rotation 71

9/7-9/16	9	10	663	706.5	43.5	.713		$ 3.29

San Antonio.

During the week ending September 9, the maximum temperature was 95; minimum temperature, 67; greatest daily range, 25. Several small showers occurred which interfered seriously with field work.

All fallow rotations plats and other fallow fields were harrowed. All orchards were cultivated. Considerable weeding was done. A part of field AB 8 was plowed. Soil samples were taken on the cotton plats in the rotations.

A hog tight fence was constructed around a small area in the pasture and the hogs were removed from the sudan grass to this lot.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Scottsbluff.

During the week ending September 16, some of the fences were repaired. Irrigation of some of the pasture grasses were started, but on account of rain the water was cut off.

All of the dry land corn was cut. This was fairly matured. On September 14 a severe freeze occurred. All of the irrigated corn froze at that time, and indications are that this corn will be very poor; it is doubtful if more than 5 per cent. of this corn had started to dent at the time of the freeze. The potato vines were also frozen down, and as soon as these are dried up completely digging will begin, as there will be no further growth.

Yuma.

During the week ending September 9, the maximum temperature was 105; minimum temperature, 56; greatest daily range, 46; precipitation, .32 inch. Thirty-two acres were irrigated. The weather during the latter part of August and first part of September has been very trying for man and stock, but it has been much cooler since the rain on the 8th.

Sudan grass and Jack beans, grown as a green-manure crop on B-11 to 17, have been turned under, and the land prepared for planting tepary beans and cowpeas. Alfalfa was harvested from D-17-18-19-21 and 22. A late planting of potatoes was made on D-43. F-1, seedling pecan plat, was disked and hoed. Suckers were removed from the seedling fig orchard.

Much miscellaneous hoeing and cultivating of field and nursery plats was accomplished, also, borders and ditch banks were hoed and grass hauled from borders. Sorghum on A-14-7 was thinned.

The steers on the alfalfa grazing test were weighed and show a much larger gain than during the previous month.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

During the week ending September 9, three and one-half days were spent in the office, bringing hog data and dairy summaries up to date. Eighteen farms were visited; 2 calls for assistance were answered by telephone, and one farm visit was made. Seven office conferences were held with farmers.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

The Tieton Cooperative Sawmill Company have practically completed sawing for the season. They have sawed 150,000 feet of lumber, nearly all of it for stockholders since the fall of 1915. Present indications are that the 1916-17 output will be close to 300,000 feet. The Company was originally capitalized for $1,000, with 100 shares at $10 each. It was subsequently decided that the shares were worth $20, and that they would sell at that figure. The present capitalization is, therefore, $2,000, and 79 shares are owned by project farmers, the remainder not having been sold at present. The equipment, including the sawmill, gasoline engine, and planer cost about $2,000 set up in the plant. The Company charges $5.50 per M for sawing for stockholders, and $7 for non-stockholders. This charge will probably be maintained until the mill has paid for itself with earnings. The mill is equipped to turn out all material needed in ordinary house and farm building construction, except shingles.

Shoshone.

During the week ending September 9, 7 farm visits were made, 3 men called at the office, 9 other conferences were held, 8 communications were made by letter, 1 article was written for the local newspapers, and 7 cows were tested in 2 herds.

One day was spent with Mr. Lovelace, immigration agent for the Burlington Railroad, in collecting samples of grain for exhibit.

The proposition of shipping dairy stock from Wisconsin still fails to arouse much interest. It is probable that several dairy herds will be for sale this fall and winter.

Cole Cattle Company, who run a large herd of Herfords in the mountains, are trying to arrange with farmers here to winter the cattle. They offer to buy the hay at $6.00 per ton in the stack and feed it on the farm, if the farmer will furnish the water. The proposition was discussed with several farmers. It seems a good proposition for farmers who do not have their farms stocked.

Huntley.

During the week ending September 2, 4 farm visits were made, and the following points in Montana were visited: Sheridan, White Hall, Butte and Bozeman. The forest supervisor at Sheridan was interviewed, and a conference was had with different members of the college faculty at Bozeman.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley (continued).

Although one of the objects of the trip was to arrange for institute meetings on the Project this winter, owing to the absence of Prof. Cooly and Dean Linfield, no arrangements could be made.

A portion of the pig feeding demonstrations being carried on in cooperation with Mr. Sherman was brought to a close on August 12. On June 23, Mr. Sherman's entire swine herd consisting of 93 July and August shoats and 59 February and March pigs were weighed up for the purpose of keeping records. The 93 shoats averaged 115 pounds, and the 59 pigs averaged 49 -7/10 pounds on this date. On July 14 8 pigs weighing 345 pounds were sold and removed from the lot. Although the pigs and shoats were weighed separately, they were fed together and received a ration of shelled corn which was supplemented with whole barley during the latter portion of the feeding period. From June 23 to August 12 all the hogs grazed an irregular field of rather poor alfalfa. The field is approximately ten acres in area, and did not furnish sufficient pasture for the pigs at any time during the period.

During the week ending September 9, 5 farm visits were made.

One trip was made to Billings to attend a sale of Jersey cattle on September 8. The offering was poor, and so little interest was manifested by the small crowd present that the sale was called off soon after starting.

Two requests for assistance in locating pure bred bulls were received from Project farmers during the week.

Boise.

Practically the entire week ending August 26 was devoted to silo work. Two concrete silos have been started and plans completed for a number of others of different types which will be built within a week or so.

Minidoka.

The week ending August 26 was spent in answering requests for visits and in making a general survey of the live stock and agricultural conditions on the Project. Mr. Farrell visited the Project during the week.

A condition of the irrigated pastures that is perhaps local is that the white clover in the mixtures is reseeding itself so as to form a larger proportion each year. In some of the older pastures it has

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

become so thick that the pasture cannot be used for sheep or cattle.

Harvest of the grain on the irrigated farms is well under way and threshing began the last of the week. The second cutting of hay, which is quite heavy, is being put up.

Wheat advanced to $2.00 per hundredweight during the week. But little hay has been contracted for winter feeding. The farmers are holding for $8.00 in the stack, while the sheepmen refuse to pay over $7.00. Considerable hay is still being baled and shipped out at $10.50 on the cars. This nets the farmer about $7.25

Uncompahgre.

During the week ending September 9, 12 farms were visited, 9 samples of milk and cream were tested for butterfat, 11 requests for service and information were received. The work of filling silos was discussed with 2 farmers.

On Monday a visit was made to the farm of Mr. Edgar where the members of the Maple Grove Pig Club were met and instruction was given them in pig judging. This work is interesting the older farmers and is very helpful in the work.

Two days were spent in the vicinity of Olathe looking over the corn crops that are to be put into the silos. It was found that a number of the fields had already reached the proper maturity. An article was prepared for the local papers on the work of filling the silos. Mr. Cless, a farmer on the Project, has just completed a pit silo and has asked aid at filling time. This silo was dug in a rather sandy loam. It was found in digging that the water table was 17 feet below surface. The pit was cemented and will be filled at that depth this season.

There have been several heavy rains during the week. The work of digging potatoes is well under way, and the results are very gratifying to the growers. The price is at 1.60 per cwt. There are 14 buyers in Olathe. One day during the week it is reported 50 car loads were sent from the shipping points on the Project.

Butterfat prices are at 32¢. Wheat is bringing $1.80 per cwt.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending September 16, the maximum temperature was 95; minimum temperature, 66; greatest daily range, 24. The total precipitation was 1.61 inches, most of which came in one rain on the afternoon of the 12th.

Field work the first part of the week consisted of plowing, and weeding orchards and fallow fields. On account of the rain on the 12th, field work was not again possible until the 16th. All fallow rotation plats were harrowed on the 16th, and orchards were cultivated. Material was hauled and some work was done toward the construction of an addition to the machine shed in order to make more room for ginning machinery and for storing and ginning cotton.

Professor W. Roberts, of the Agricultural Service of India, visited the farm on the 11th and 12th. Messrs. Letteer and Gilbert accompanied him on a short trip through the territory adjacent to San Antonio for the purpose of observing methods of growing cotton practiced in that section.

Mr. O. F. Cook returned to the farm on the 13th, after spending a short time at Greenville, Texas.

During the week ending September 23, the maximum temperature was 93; minimum temperature, 56; greatest daily range, 34. Clear, pleasant weather prevailed throughout the week and there was no precipitation.

Field work was continued throughout the week without interruption. Harrowing of fallow fields was finished and cultivation of the orchards was completed. Plowing of fields F3 and B4 was completed. The pasture near the barn was also plowed, preparatory to seeding to Rescue grass. Miscellaneous weeding was done on the rotation plats and in the orchards. Cotton picking in various experiments was continued. Counts of cotton stands in the rotation experiments were made. Considerable work was done on the grounds in cutting weeds and grass and in general cleaning. Hauling of the first cutting of sorghum from the rotation plats was finished. A fall garden was planted on Friday afternoon.

Messrs. Kearney and Collins visited the station on the 18th. On the night of the 13th, Messrs. Cook, Kearney, Collins and Loomis left for Arizona and California points.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche.

During the week ending September 23, the maximum temperature was 87; minimum temperature, 28.

All third cutting alfalfa in the irrigated rotations was mowed and is ready to be hauled in and stacked. The seed alfalfa in field I was mowed and cocked.

Digging potatoes, varieties in field O, and in the dry land rotations, was completed.

Corn in the dry land rotations and in the irrigated rotations, the varieties in field O, and fall irrigation experiment, was harvested and shocked.

Two four-horse teams were used in plowing during the fore part of the week.

Yuma.

During the week ending September 16, the following temperatures were recorded: Maximum, 107; minimum, 60; greatest daily range, 45. Forty-five acres were irrigated.

Alfalfa was harvested from B-6 to 10, C-21, 22, 24 and E-7 and 8; also, several varieties of cowpeas on D-10. The dates in the seedling date orchard are ripening. A few early palms are sufficiently mature to pick. Green manure plats B-11 to 17, plowed under last week, were seeded to tepary beans and cowpeas. These plats were immediately followed by an irrigation and two days later harrowed to break the crust. As a result there is a good germination of both beans and cowpeas. The planting of a fall garden was begun on A-14-1. All manure from the corrals was hauled to A12-3 and A14-1.

The date orchard plats on field A and plat A-26 (Eucalyptus) were disked. E-3-4, C-37-38 (sorghums), C-27-28 (alfalfa) and three acres of small plats were cultivated.

Hoeing was continued on irrigation system borders and roads.

A pile of wood accumulated during the year was sawed.

Umatilla.

During the week ending September 9, the maximum temperature was 81; minimum temperature, 45; precipitation, .03 inch.

The old flumes were removed and ditches made for use in irrigating fields D1 and D5. The ground in these two fields was prepared by regrading and disking for the winter crop. Vetch was allowed to reseed on a part of the land and the remainder was sown to rye. A thorough irrigation was given each field to insure germination of the fall sown crops.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Umatilla (continued).

During the week ending September 16, the maximum temperature was 86; minimum temperature, 32.

Field A3 was graded into borders of varying width for the purpose of determining the influence of width of border and size of head of irrigation water upon the amount necessary to make a thorough irrigation. The borders, five in number, range in width from 20 to 40 feet, are level in cross section, and have approximately the same degree of slope. The land will be sown to alfalfa immediately.

The regrading necessary to level up field C2 was partly done, the land irrigated, and disked to start the crop of vetch and rye that was allowed to go to seed upon it.

C1a and C1b were sown to vetch. C1c was sown to rye. The corn was removed from C1a preparatory to sowing the vetch.

An Experiment Station Field Day was held September 13 at which there was a good attendance and exceptional interest. Principal emphasis was placed upon the means by which water can be economically handled upon the coarse soil types of the district. All the experiments pertaining to this subject were explained in detail, and a summary of the results were given with a recommendation for their application.

Huntley.

The gains made by the spring pigs on alfalfa pasture, field K, during the week ending September 9, are given in the following table:

No. of hogs	No. of days	Initial weight	Final weight	Gain	Av. daily gain	% daily gain
76	10	79	91	12	1.2	1.43
77	10	74	81	7	.7	.88
78	10	67	77	10	1.0	1.41
79	10	60	69	9	.9	1.41
80	10	67	76	9	.9	1.29
81	10	85	95	10	1.0	1.14
82	10	63	76	13	1.3	1.93
83	10	69	80	11	1.1	1.49
Total		564	645	81	8.1	
Average		70	80	10	1.0	

Corn consumed.....112.8
Daily return per acre.....$1.82

Field Notes.

Huntley (continued).

The gains made by the sheep on one-half acre pasture in field BV are given below:

No. of sheep	No. of days	Initial weight	Final weight	Gain
Ewes				
66	10	122	118	-4
68	10	137	135	-2
70	10	119	119	0
74	10	118	120	2
Total		496	492	-4
Average		124	123	-1
Lambs.				
67	10	104	106	2
69	10	104	105	1
71	10	100	99	-1
73	10	95	101	6
Total		403	411	8
Average		101	103	2

Truckee-Carson.

Weather Record.

Week ending	Maximum temp.	Minimum temp.	Precipitation
Aug. 26	95	37	--
Sept. 2	95	43	.09 inch
9	89	37	--
16	89	28	--

The wheat variety test on the farm of Tom Dolf was threshed September 1 to 4. This field was seeded March 30. On account of the irregular shape of the field it was decided to make the plantings in single plats rather than in duplicate. The soil was fairly uniform and a good yield was obtained from all parts of the field. The table on the following page gives the area and yield of each variety.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson (continued).

	Area	Yield	Lbs. per acre.	Bus. per acre.
Little Club	.87	2725	3132	52.3
Rieti	1.02	2968	2908	48.5
Marquis	.72	1850	2570	42.9
Dicklow	.42	1066	2540	42.3
Defiance	.78	1969	2525	42.1
Sonora	.58	1423	2455	41.0
Bluestem	.80	1785	2232	37.4
Gherka	.48	1042	2173	36.2

Little Club gave the highest yield per acre again this year. Two consecutive years' test with these varieties have now been completed, the results of which are given in the following table.

	1915	1916	Average
Little Club	45.5	52.3	48.9
Rieti	42.7	48.5	45.6
Dicklow	41.6	42.3	42.0
Marquis	39.0	42.9	41.0
Defiance	38.5	42.1	40.3
Sonora	37.3	41.0	39.2
Bluestem	40.5	37.4	39.0
Gherka	35.0	36.2	35.6

On April 10 Mr. Swingle planted 150 pounds of Canada field peas, furnished by the Experiment Farm, on 1-1/4 acres of land, together with 60 pounds of wheat. There was a satisfactory germination of the peas but unfortunately the wheat was too thick, so that the peas were held back and did not make so rank a growth as could be desired. On September 7, 34 hogs, weighing 2140 pounds, were turned into the field. All pigs will be weighed when removed so as to secure data as to gains and value of pasture.

The potato varieties on plat H-1 were dug September 13. The yields were poor and unsatisfactory. Some of the varieties produced a large percentage of knotty, misshaped tubers. The varieties which were best in regard to uniformity in shape and size were Hundredfold, Colorado Pearl, American Wonder, Early Ohio, Rural New Yorker, and Irish Cobbler. The Burbank strains are very much inclined to take on second growth and for that reason are not desirable. It would seem from the results so far obtained at this station that the general adoption of some other variety than the Burbank would be advisable. The Colorado Pearl has been one of the best yielding varieties,

Truckee-Carson (continued).

and it is uniform in shape, with very little second growth. From the data at hand it would seem that a more general adoption of this variety might be recommended. The yields obtained in this experiment are given in the following table:

Variety	1916	Average for 4 years.
Dietz Burbank	54	69
American Wonder	44	47
Earliest of All	26	46
Rusty Coat	51	43
Colorado Pearl	45	40
Burbank	40	39
Hundred Fold	47	39
Early Rose	22	36
Early Freeman	43	35
Gold Coin	33	31
Great Divide	30	30
Prizetaker		28
White Beauty		28
New White Victor	47	23
Irish Cobbler	27	26
Rural New Yorker	36	25
Pride of Multnoma	16	25
Ohio	39	23
Triumph	30	23
New Snow		20
Livingston	21	17

A canning demonstration was given at the Experiment Farm on September 9 by the Extension Department of University of Nevada. Tomatoes from the variety tests were used for this work. Only a small number of ladies came to this demonstration, probably because of the proximity of the local fair, which opened two days later. Demonstrations were continued in Fallon throughout the Fair week.

Five varieties of silage corn were planted on May 30 on the Churchill Creamery Farm. The field was poorly arranged and during the summer not a single cultivation was given. Because of this it was decided that the experiment would be valueless as a variety test and the weights of the individual varieties were not kept separate. The product of the entire field was weighed and the yield per acre of the green corn was found to be 4.1 tons. A total of 41,405 pounds were obtained from an area of 5.03 acres.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson (continued).

Severe frosts occurred on September 10 and 11, killing corn and all tender garden truck that was not protected. A part of the tomatoes and melons on the Experiment Farm were covered with straw, which was effective in preventing much injury.

Mr. Headley made a trip to California during the last week in August with two objects in view. One was to have an interview with Messrs. Lipman and Sharp, of the University of California, in regard to alkali soils, with which they have been working for many years. The other reason for making the trip was to obtain information in regard to the production of "certified seed potatoes" in that State. Many potato diseases have appeared on the Project which are being further propogated and spread by the local methods used. It is hoped that some steps can be taken which will encourage farmers to select their seed and to plant only clean seed. The horticultural inspectors state that the production of "certified seed" has only begun in California and that the demand for it is much greater than the supply.

In January an experiment was begun in the greenhouse beds to determine the effect of various fertilizers on the growth of wheat. The fertilizers used were acid phosphate, rock phosphate, gypsum, potassium sulfate, ammonium sulfate, bone meal, complete, and barn yard manure. The acid phosphate produced a very remarkable growth compared with the other plats. This is in accord with field experiments performed here in previous years in which the acid phosphate was the most efficient fertilizer in increasing yields of alfalfa, grain and onions. Barn-yard manure was also decidedly beneficial but the other fertilizers produced no increase in yield or the increases were insignificant.

	Treatment	Fertilizer applied per square ft., grams	Number plants	Weight crop, grams
1	Check	0	29	90
2	Acid Phosphate	5	30	220
3	Rock Phosphate	10	30	73
4	Check	0	30	57
5	Gypsum	10	30	54
6	Potassium Sulfate	10	30	56
7	Check	0	30	45
8	Ammonium Sulfate	5	30	73
9	Bone Meal	10	30	56
10	Check	0	30	43
11	Complete		29	52
12	Manure		30	117

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Huntley.

During the week ending September 23, 6 farm visits were made, and 32 milk samples were tested for 4 Project dairymen. Three days were spent at the Midland Empire Fair at Billings where the live stock exhibits were inspected in the interest of Project farmers, and 2 farmers were advised regarding the purchase of dairy bulls.

Uncompahgre.

During the week ending September 16, 20 farm visits were made, and 14 calls for service and information were received.

The week was spent largely with the work of silo filling. Two of the three silos in connection with which work was done were wood stave and the other a pit silo.

The coming week is the time set for the holding of the Fair at Montrose. Some work has been done in interesting farmers in exhibiting their stock. There is promise of a very good hog display and a fair display of dairy stock. One disadvantage at this time of the year is the fact that the farmers are very busy with their fall work and it is very hard for them to spend the time at the Fair and care for their animals during the week.

The boys in the Riverside and Uncompahgre pig clubs were visited on Thursday and given instruction in judging pigs. In the evening the members of the Colona and Riverside Granges held an open meeting and a talk was given there on hog raising and club work.

There were 2 carloads of hogs sent to Denver on Saturday. The prices are around 11¢ at Denver. There is a tendency for the farmers to send their hogs in a partially finished condition, on account of the high price of grain.

Several inquiries have been received during the last few days for dairy cows and heifers. A meeting will be held the latter part of next week to determine the wish of those interested in regard to the purchase of animals on the outside.

The farmers are reaping a wonderful harvest of potatoes this year. One farm will dispose of 30 carloads. This represents an income of nearly $15,000 from 45 acres. The yields are very good and the price is $1.50 per cwt.

During the week ending September 23, 7 farm visits were made and 10 requests for service and information were received. One hog weighing test was completed and assistance was given in two coopera-

Uncompahgre (continued).

tive shipments of hogs.

The Western Slope Fair was held at Montrose. The stock show in connection with the Fair was better than in previous years. This was especially true of the showing of hogs. There were 12 hogs at the Fair in 1915 and nearly 50 in 1916. Eight of the hogs shown were brought in by members of the pig clubs. Of all the hogs shown there was one Chester White and one Poland China; the rest were Duroc-Jersey. There was a very good showing of sheep and dairy cattle. The horse showing was somewhat lighter than usual.

One complaint was received during the week of an outbreak of blackleg in a range herd of cattle. This herd is located 40 miles away from the Project but is owned by Project farmers. Application was made to the Salt Lake office of the Bureau of Animal Industry for the material to be used in the treatment.

At the request of a number of farmers interested in buying cows, a meeting was called at the office on Saturday. There were 10 men present, including a local banker who is interested in the loaning of money to the farmers for the purchase of dairy stock. He wishes to loan money on good security at 10 per cent. This did not appeal to the farmers present, as they felt that the rate was too high. It is a very favorable time for the farmers to purchase stock on account of the high yield of potatoes and other crops and the good prices being received for them. In most cases the farmers do not need to borrow the money. It is hoped they will be able to purchase two carloads. These will be Holstein and Guernsey. As there were not enough men present to make any definite plans, a meeting has been called for next Saturday, at which time it is hoped to have a line on the number of animals wanted.

There are a large number of hogs leaving the Project at the present time. On account of the high priced grain there is a tendency for the farmers to send out their hogs in a partially finished condition. As a result there are a large number of low priced hogs on the Denver market. The farmers are being encouraged to hold their hogs longer and give them a better finish.

Hog prices are around $10.50 on the present market. Wheat is bringing 3¢. Butterfat is bringing 32¢.

Minidoka.

Report on First Annual Ram Sale.

The last four days of the week ending September 2 were spent at the Sheep Show and sale of the National Wool Growers' Association, and in conference with the members of the Association at Salt Lake City.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

Over 3,000 sheep, mostly rams, were on exhibition; 2,420 sheep, of which number approximately 1,500 were range rams, were sold at auction at an average price of $53.36 per head.

Much enthusiasm and interest in good, well-bred sheep were in evidence. Range sheepmen were heard to state that for the first time they were able to buy really good bucks to improve their range flocks.

High prices prevailed, the top being $1,000, which was paid for a Rambouillet ram. The bidding was somewhat erratic, it being impossible to anticipate or predict prices. In some cases there was but little judgment used as some of the animals that topped the sale for their respective breeds were not superior to others that were bid in at a much lower figure. The two Hampshires that went for the highest prices were not the best individuals in the sale. The purchaser of the highest priced Rambouillet stated that he had bid on this sheep without seeing him before he entered the ring, relying entirely upon the judgment of the other bidders. However, this was an exceptionally fine individual, probably the best in the show. The one that sold for the next highest figure ($800) was no better than a number of others which were sold for much lower prices.

The popular sheep among the range buyers were the larger specimens, those of good size and bone. Style was a very important factor. In almost every case, sacrifices would be made for these three points.

Of the fine wools, the big, smooth C type-the so-called mutton merino- was by far the most popular. On the smaller specimens and those that showed many folds, the bidding lagged. In all, 1174 fine wools, practically all Rambouillets, were sold through the ring. Of this number, 70 were sold individually for an average price of $166.45, the top price being $1,000, which was also the top price for the sale. 1104 head were sold in groups, mostly in lots of 25, as range rams, at an average price of $40.77.

In the Hampshire classes there was some difference of opinion. Here, too, the range men were inclined to select for bone and size while the farm breeders gave more attention to the finer points such as quality and covering of wool, smoothness of shoulder, spring of rib, breadth of loin, levelness of rump, fullness of leg of mutton and twist, compactness and closeness to the ground; in other words, the type tending towards the approved Shropshire type. Yet, as a rule, from both the range and the farm standpoint the popular types were larger and more upstanding than the type most favored in the East. A total of 459 Hampshires were sold, 62 singly, and 397 in groups. Those sold singly averaged $197.10 with the top at $675. Those sold in groups went at an average of $65.25 per head, one lot of 25 going at $205 per head. In addition, 61 ewes were sold in lots of from 5 to 30 at an average price of $67.88 per head. One lot of 6 ewes was sold for $152.50 per head.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

The demand for Cotswolds came mostly from the sheepmen from Utah, Wyoming and eastern Idaho. 18 head were sold singly at an average price of $121.38 per head, top at $250; 239 were sold in lots at an average of $43.75.

The best demand for Lincolns was for stud rams, the range lots going comparatively cheap. In all 104 head were sold, of which 6 were bid in singly at an average of $220.08, top at $550, and 98 in lots at an average of $32.90.

Although the Shropshires shown and sold were uniformly good, equal in quality to the other breeds shown, the interest and demand were not great. A prevalent opinion was that as long as the present preference is given to the Hampshire by the range men, it would be well to confine the Shropshire to the corn belt. A total of 115 Shropshires, all of them good individuals, were sold in lots at an average of $39.33.

There were 20 Romneys put up and sold at $31 per head. Three Leicesters, a novelty to most of the western sheepmen present, were put up and sold, one ram at $150, one at $100, and a ewe at $100. All were good individuals.

Both Corredailes and Panamas were on exhibition. No Corredailes were offered for sale, but 50 Panamas were offered and sold at an average of $40. Although both possess the same blood, crossed in a different way, there is much difference in the type and appearance, the Corredailes being much larger and with a coarser wool, the Panama being of the familiar "range ewe" type. There was much interest in these two types, especially the Corredailes. Regarding the Panamas there was some skepticism.

The show and sale were successful beyond all expectations, and it is planned to make both an annual event. This scheme was indorsed by all present as offering a market place where the pure bred breeder and the range man can get together. It also offers some means for getting a standard of values.

There was an attendance of about 800. The threatened railroad strike hurt the last day to some extent as many of the buyers had gone home and those that remained feared to buy, so that the bargains were obtained on that day.

While it had been planned to have the annual convention of the Wool Growers at this time this was postponed, owing to the fact that the majority of those present were too much interested in looking over the sheep to attend the called sessions.

Assistance was given in the selection of 18 head of pure bred sheep of which number 6 will be used as stud rams on the Minidoka Project.

For convenience in making comparisons, the following table is given, showing the number and average prices of rams of the various

Minidoka (continued)

breeds:

Breed	Total sold	Top price	Sold singly. Number	Sold singly. Av. price	Sold in groups. Number	Sold in groups. Av. price
Rambouillets*	1174	$1000	70	$166.45	1104	$40.77
Hampshires	459	675	62	197.10	397	65.25
Cotswolds	237	250	18	121.38	239	43.75
Lincolns	104	550	6	220.08	98	32.90
Shropshires	115	-	-	-	115	39.33
Romneys	20	-	-	-	20	31.00
Panamas	50	-	-	-	50	40.00

* And a few other fine wools.

Truckee-Carson.

Cooperative Marketing of Hogs.

During the week ending September 16, another cooperative shipment of hogs was sent to San Francisco. There were 97 hogs consigned by 10 farmers. The total weight at Fallon was 17,084 pounds, and at San Francisco, 15,885, showing a shrinkage of 1,199 pounds for the car, or an average shrinkage of 7.01 per cent. This comparatively low shrinkage was due to the excellent time made by the shipment, and the fact that the hogs were unloaded and fed at Tracy, a short distance haul from San Francisco.

The prices received at San Francisco were from 8 to 8-3/4 cents for the bulk of the hogs. One consignment of especially well finished hogs brought 9 cents per pound.

The freight charges for the car was $58.90, and the switching charge, $2.50, making a cost of $61.40, or 36 cents per hundred pounds, based on weights at Fallon. There was an incidental expense including time for man to accompany the shipment, $16.00, return transportation (since only one car was sent) $11.50, and lumber for making feed troughs, $3.05. This incidental expense amounted to $30.55, or 17.8 cents per hundred pounds based on Fallon weights. The total cost of transportation based on San Francisco weights was 57.9 cents per hundred.

The total cost of shipping prime hogs when the selling price is $8.75 should be figured as follows: Cost of transportation, 53.8 cents per hundred; loss from shrinkage, based on price paid for prime hogs and based on average shrinkage for the car, 61.3 cents per hundred pounds; or a total shipping cost of $1.15 per hundred.

Truckee-Carson (continued).

The cost of shipping of 8 cent hogs is, for transportation, 53.8 cents, and loss from shrinkage, 56.08 cents, or a total of $1.09 per cwt. These figures show the average price received for the shipment, based on home weights, to be $7.60 for prime hogs and $6.91 for 8 cent hogs. The actual price received by each shipper will vary with the per cent. of shrinkage. A shipment of two carloads of hogs is contemplated for the latter part of this month. Only well finished hogs should be shipped. The San Francisco buyers receive the right to deduct one-half the loss resulting from condemnation by federal inspection.

Shoshone.

During the week ending September 16, 12 farm visits were made.

One day was spent at the Park County Fair at Cody, where some pigs were exhibited by the members of the Boys' Pig Club.

A sale of dairy stock was held by one of the farmers who has gone out of the dairy business. All of the females were grade Holsteins. The best cow sold for $100; a two-year-old heifer, just about to freshen, sold for $80. Four fairly good heifer calves sold for $31 each, and a registered Holstein bull, 18 months old, sold for $65.

PAY ROLLS.

Receipt of salary checks in the field would be considerably facilitated if pay rolls were received in this office by the 25th of each month. If but one or two pay rolls are received by that date it is necessary to hold these until others come in to avoid multiplicity of rolls. Therefore, delay on the part of one farm may not only retard the receipt of checks for that farm, but also for other stations that have been prompt.

MAIL.

The Postal Laws and Regulations have recently been amended so as to exclude from the mails under the penalty privilege all packages exceeding 4 pounds in weight. The Third Assistant Postmaster General has advised that when packages of merchandise or similar matter exceed 4 pounds in weight the postage on the entire weight must be paid. As the appropriation for postage will not be sufficient to meet this extra burden, heavy shipments should be divided, whenever possible, so as to come within the weight allowed under the penalty privilege. All packages weighing over 4 pounds should be shipped by either express or freight.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Huntley.

During the week ending September 23, the maximum temperature was 85; minimum temperature, 30.

The first frost of the season occurred on September 13 and 14, when the minimum temperature was 30. Most of the corn, excepting a few of the late varieties in the variety tests for grain and silage, was far enough advanced to escape injury. To obtain an estimate of the amount of silage produced in field A-IV, in the six varieties of corn, one row of each variety in each plat was harvested, three that had matured, on September 11, and the remaining three on September 14, after frost had occurred. The plats in this series are 1/4-acre in size, and the varieties were grown in duplicate. Each plat contains 11 rows, 290 feet long, so the average yield of each variety given was obtained from 1/22 part of an acre. The yields are given in the following table:

Plat No.	Variety	Date Harvest	Yield. Row (lbs.)	Yield. Acre, (tons)
A-IV-1	N.W.Dent	9/11/16	248	5.46
-7	do.	do	542	11.92
Average			395	8.69
A-IV-2	U.S.Sel. #133	9/14/16	400	8.80
-8	do	do	660	14.52
Average			530	11.66
A-IV-3	Aust. Flint	9/14/16	450	9.90
-9	do	do	868	19.09
Average			659	14.49
A-IV-4	Minn. #13*	9/11/16	290	6.38
-10	do	do	540	11.88
Average			415	9.13
A-IV-5	Martins W. Dent	9/14/16	490	10.78
-11	do	do	720	15.84
Average			605	13.31
A-IV-6	Eikers Y. Dent	9/11/16	364	8.00
-12	do	do	490	10.78
Average			427	9.39

* Local seed.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Huntley (continued).

The varieties Northwestern Dent, Minnesota #13, and Eiker's Yellow Dent were matured enough for silage by September 10, while U. S. Selection No. 133 and Martins White Dent were beginning to dent, and Australian White Flint was in the soft dough by the date of frost.

The difference in yield of the same varieties may be accounted for by the soil difference in this field. The south half of the field is very heavy and dries out rapidly after irrigation, while the north half is comparatively light and sandy and retains moisture. All of the varieties were irrigated once during the season, on July 25.

The third cutting of alfalfa was harvested during the week.

Messrs. Rabild, Scott and Parks, of the Bureau of Animal Industry, reached the station on September 15, and spent three days in working out plans for buildings and equipment for the proposed live stock work. Director F. B. Linfield and Prof. A. Atkinson visited the station on September 16, and Prof. C. N. Arnett visited the station on the 17th.

Irrigated Rotation - Fields K and L-IV.

The third cutting of alfalfa is now being harvested. Fall plowing on stubble plats is well under way.

On September 23, the 8 spring pigs which were on alfalfa pasture for the summer period (July 15 to Sept. 23) were placed on the plats of corn which were to be hogged off. Four were placed on the corn plat in field K, rotation 67, and the other 4 were placed on the 2 corn plats in field L-IV, rotation 69.

The following table shows the gains made by the spring pigs on alfalfa pasture and 2 % corn, field K, rotation 67, during the summer period.

No. of hog	No. of days	Weights. Initial	Weights. Final	Gain	Av. daily gain	% daily gain
76	70	51	97	46	.66	.90
77	70	50	93	43	.61	.87
78	70	42	85	43	.61	1.01
79	70	39	78	39	.56	.99
80	70	39	85	46	.66	1.15
81	70	54	102	48	.68	.89
82	70	40	82	42	.60	1.03
83	70	41	87	46	.66	1.10
Total		356	709	353	5.04	
Average		45	89	44	.63	.99

Lbs. corn consumed..... 696.0

Net return per acre..... $71.00

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).

The sheep pasturing experiment with ewes and lambs on pasture of mixed grasses in field B-V was concluded Sept. 18. Several irregularities have occurred during the entire pasture period, which have caused the results to vary considerably.

The results of the experiment are given in the following tables:

5 ewes and 5 lambs on 1/2-acre pasture of mixed grasses, field B-V. May 6-June 20.

No. of sheep	No. of days	Weight Initial	Weight Final	Gain
Ewes				
66	46	125	134	9
68	46	146	152	6
70	46	125	129	4
72	46	164	171	7
74	46	119	123	4
Total		679	709	30
Lambs.				
67	46	77	94	17
69	46	70	84	14
71	46	75	88	13
73	46	82	111	29
75	46	71	83	12
Total		375	460	85

For three days (May 28-June 1) during the above period, the sheep were pastured in field B-V-4, the plat occupied by the heifer. Cold and wet weather made this arrangement necessary, as the supply of pasture was getting low.

On June 10, the ewes were shorn. The fleece of each weighed as follows: No. 66, 16 lbs.: No. 68, 10½ lbs.: No. 70, 11 lbs.: No. 72, 11 lbs.: No. 74, 9½ lbs.: Total, 58 lbs.

On June 20, the pasture again being low, the sheep were all removed to the feed lot. Here they remained for 10 days (June 20-30). During the 10-day period in the lot they were fed 60 pounds of alfalfa hay per day. The sheep were returned to the pasture on June 30.

Huntley (continued).

5 ewes and 5 lambs on 1/2-acre pasture of mixed grasses, field B-V, June 30-July 30.

No. of sheep	No. of days	Weight Initial	Weight Final	Gain	Loss
Ewes					
66	30	127	117		10
68	30	147	136		11
70	30	124	118		6
72	30	162	147		15
74	30	121	116		5
Total		681	634		47
Lambs.					
67	30	95	97	2	
69	30	87	89	2	
71	30	92	97	5	
73	30	110	114	4	
75	30	92	91		1
Total		476	488	13	1

On July 30, the number of sheep was reduced to 8 head, one ewe and one lamb being removed. In the place of the 4 lambs obtained at the beginning of the pasturing experiment, 4 others of about the same total weight, were put on in their place. This arrangement was made in order to wean the lambs.

4 ewes and 4 lambs on 1/2-acre pasture of mixed grasses, field B-V. July 30-Sept. 18.

No. of sheep	No. of days	Weight Initial	Weight Final	Gain	Loss
Ewes					
66	50	117	114		3
68	50	136	128		8
70	50	118	114		4
74	50	116	116		0
Average		487	472		15

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).

No. of sheep	No. of days	Weight Initial	Weight Final	Gain	Loss
Lambs					
67a	50	100	106	6	
69a	50	102	105	3	
71a	50	89	96	7	
73a	50	99	97		2
Average		390	404	16	2

Scottsbluff.

During the week ending September 26, all of the early potatoes on the farm were dug. This included the varieties and the irrigated experiments. The yields were only fair. The potatoes were on field H, on the north end of series II. Due to flooding several times by rain the potatoes were rather coarse and scabby with considerable second growth.

Putting up of the third cutting of hay was started during the week. The greater part of the hay was cocked in good shape.

One man was employed part of the week in irrigating field K.

Under date of September 25, Mr. Holden submitted a tabulated statement of the results of an experiment comparing alfalfa pasture and corn alone in dry lot for finishing shoats. The experiment began July 7 and ended September 8. The shoats in dry lots were given all the corn they would clean up during the whole period. The shoats on pasture were given a limited amount of corn during the first 30 days, but during the last 33 days they were fed all they would eat. The shoats on pasture had access to plenty of good pasture all the time. At the end of the experiment they were sold to a local buyer for $9.80 per hundredweight.

First Period, 30 days	Pasture Lots		Dry Lots	
	Lot 1	Lot 2	Lot 3	Lot 4
Number of hogs.....	16	12	16	12
Total initial weight.....	2386	1430	2286	1471
Average initial weight.....	149	119	143	123
Total final weight.....	2852	1862	2868	1907
Gains made.....	466	432	582	436
Corn fed.....	1570	1382	2610	2020
Corn fed daily per 100 lbs. wt. .	2.0	2.8	3.4	4.0
Corn fed per lb. gain.....	3.37	3.20	4.48	4.63

Scottsbluff (continued).

Second Period, 33 days.	Pasture Lots		Dry Lots	
	Lot 1	Lot 2	Lot 3	Lot 4
Total final weight.....	3818	2495	3489	2470
Gains made, lbs.	966	633	621	563
Corn fed.....	3986	2739	3582	3088
Corn fed per 100 lbs. wt.	3.6	3.8	3.4	4.2
Corn fed per lb. gain	4.12	4.32	5.78	5.48
Total period, 63 days.				
Average final weight per hog.....	239	208	218	206
Total gain made	1432	1065	1203	999
Average total gain per hog	90	89	75	83
Lbs. corn per lb. gain	3.88	3.87	5.15	5.11

Yuma.

During the week ending September 23, the maximum temperature was 100, minimum temperature, 53; greatest daily range, 28. Thirty-one acres were irrigated.

Date plantings on A-16 & 17 and C fig orchard were disked. C-39 to 41, alfalfa plats, were harvested. C-28, Indian alfalfa, was harvested for seed. The grass plantings of D-15 were mowed. Miscellaneous forage crops were harvested from B-19 & D-10 & 12.

Pecans on F-1 were plowed. The deciduous orchard was harrowed, and plats C-6 & 7 and E-3-4, sorghum; C-20, corn; C-27, alfalfa; C-42-43, dates; C-44-45, cotton; and three acres of nursery plats were cultivated.

The fig orchard and road plantings of dates are being hoed.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Truckee-Carson.

The Nevada State Fair, which was held on the Truckee-Carson Project, at Fallon, during the week ending September 16, experienced an increase in interest over the first State Fair which was held there last year. The exhibit of vegetables and fruit was hardly as large as it was last year because of the early fall frost. The chief part of the Fair was the live stock exhibit. Several exhibitors were from outside the State. The exhibit of dairy cattle was the principal feature. Next in importance were hogs and poultry. There was a good exhibit of sheep, draft horses and beef cattle and some Standard bred horses.

In the dairy cattle exhibit Jerseys predominated. There were 60 registered Jersey females and 27 registered Jersey males. The bulk of the prizes in the Jersey breed were carried away by California exhibitors. The grand champion bull was owned locally. The local breeders were handicapped because their cattle were not in show shape. Although some of the local breeders were disappointed at not getting more of the premium money, they invariably said that they could understand why and how they were outclassed, and that the exhibit had great educational value for them.

The exhibit of registered Holstein cattle was made entirely by breeders from the Project. There were 16 females and 13 males. There was one Guernsey female on exhibit. The beef breeds were represented by 5 Herefords and 2 Shorthorns.

The hog exhibits were very satisfactory. There were 5 breeds, represented as follows: Berkshires, 45; Durocs, 41; Chester Whites, 38; Yorkshires, 18; Poland Chinas, 7. In the Berkshire and Duroc breeds, most of the premium money was taken by breeders outside the Project. The other breeds were exhibited by local breeders largely.

The poultry showing was very good and considerable interest was taken in it by visitors. There were 247 chickens representing 22 breeds. The rest of the poultry exhibit consisted of 20 turkeys representing 2 breeds, 14 geese representing 2 breeds, 38 ducks representing 6 breeds, and 33 pigeons representing 8 breeds.

The sheep exhibit consisted of 24 animals representing 9 herds. The draft horse exhibit included 13 Percherons and 9 Shires. There were 21 Standard bred horses on show.

While some interest is shown in the Nevada State Fair by some people outside the Project and to a limited extent by some outside the State, the Fair so far has been chiefly a Fair of the Truckee-Carson Project. The attendance is confined largely to the Project, because of the isolated situation of the different farming sections of the State. The educational features of the State Fair

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued).

are proving to be very valuable for the live stock breeders of the Project.

Tieton.

Two days of the week ending Sept. 16 were spent in the office at work with the milk and feed records. Twenty farms were visited and 4 calls for assistance were answered. One day was spent at the Moxee Community Fair, judging live stock and agricultural products. An illustrated talk was given in the evening on silos, silo construction, and filling.

The test of hogging barley and peas was finished on Mr. Lewis' farm. The 60 pure bred Duroc Jerseys averaged 53.68 lbs. in weight, and were turned into the field on August 7. They were weighed out September 16 with an average weight of 91.22 lbs. The total gain was 2252 lbs. for the lot in 40 days. The peas were fed with the use of movable panels and the pigs had access to alfalfa pasture adjacent to the peas. The field contains approximately three acres. The test will be reported in detail when the accurate measurement of the field has been made.

Several low-lying parts of the Project were frosted slightly during the week. No appreciable damage was done, only the easily touched garden stuff showing the results of the cold snap.

Three and a half days of the week ending September 23 were spent at the State Fair at North Yakima. Four farm visits were made, one to help in the erection of a silo.

The Tieton Water Users' Association made a creditable display at the State Fair. The booth contains plates of practically all varieties of apples grown on the Project, a good collection of small grain and corn, potatoes and roots, and such other articles as the committee were able to gather. A feature which attracted considerable attention was a silage exhibit in which two glass jars about 3 ft. high and 8 inches in diameter were filled with corn and wheat silage.

The three and a half days spent at the Fair grounds were given to the boys' live stock judging contest. Thirty-eight boys, the teams of 18 counties, were entered in the contest. They placed and gave their reasons for placing a class of 4 each of dairy and beef cattle, hogs, sheep and horses.

One Tieton farmer was given assistance in selecting a pure bred boar from the herds exhibited at the Fair.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka.

Most of the work of the week ending September 9 was with the range association plans for next year, studying the possibility of putting out a cooperative band of sheep and the advisability of maintaining and enlarging the cattle grazing association.

Reports from the range are somewhat pessimistic. The range is poorer than for several years, a condition brought about largely by the cold, late spring, the freezing in May and June, and the dry summer. In the Minidoka Forest there has been some rabies. This trouble has been mostly among the sheep.

Recent reports of the Project Grazing Association are not favorable. The Forest officials state that the farm raised cattle, especially the dairy stock, do not go far from the water to graze, come in by 10 or 11 o'clock in the forenoon and stand around in the shade until evening, killing the grass and raising a dust. There also seems to have been a slight misunderstanding between the riders and the Forest Ranger. This condition will be investigated with the officers of the Association as soon as they can arrange their farm work to get away for a few days.

Reports ofthe range sheepmen everywhere are more or less discouraging. The large number of homesteaders that are settling up on every available space that might possibly do for a dry farm, the two mile grazing law, and the priority right law are all playing havoc with the range industry and there is a marked decrease in the number of sheep on the range, some large outfits having cut down their bands considerably while others have gone out of business entirely. Sheepmen generally are of the opinion that when the present high prices and good times subside most of the range men will go out of the business. A few have already turned their attention to sheep on the irrigated farms as the best possibility. Men in such close touch with the range industry as Dr. McClure, Secretary of the National Wool Growers' Association, and Mr. Bowman, Secretary of the Eastern Idaho Grazing Association, are quite optimiztic regarding the opportunity of sheep on the farm and both are contemplating work of this kind, regarding the range business as expensive and hazardous. An effort to secure a good sheep range will yet be made as there have been a number of requests for assistance of this kind.

Shoshone.

During the week ending September 23, 2 days were spent at the Billings Fair.

Four of the 8 men who built silos last year have filled this year. Of the 4 men who did not fill, one failed to secure a corn

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone (continued).

crop, due to being away from home with the militia, and the other 3 have quit farming and rented their farms. One new silo has been constructed and will be filled with corn. The corn was frosted before it was mature enough to ensile to the best advantage, so some leaves were lost. The grain yield, however, was good.

Boise.

During the week ending September 16, the third weighing was made of the hogs at the State Farm, and John Waggoner's hogs at Meridian were weighed off the field of peas and wheat. The State hogs were turned into an acre of mixed peas and wheat, and will be weighed off the next week.

Mr. Waggoner's hogs, on a field of 11 acres, made a total gain of 4635 lbs., an average gain of 36.2 lbs., and an average daily gain of .9 lb. per head. This is 421 lbs. of gain per acre, equivalent to$29.47 per acre, when pork is valued at 7¢ per lb. Mr. Waggoner was somewhat disappointed in the results, although estimated returns had been based on an estimate of 4500 lbs. gain from the field.

On Saturday the monthly butterfat test was run on the herds of Mr. Rees, Mr. Horrace and Mr. Merritt. The rest of the week was spent on silo work.

Half of the week ending September 23 was spent with Mr. Rinehart on the Minidoka Project.

On Monday the herds of Whitney, Zieslet, Frank, and Fairman, of Fargo, were tested for butterfat, and on Saturday the herd at the State farm was tested and the hogs weighed off of an acre of peas and wheat and turned on an acre of horse beans.

The hogs of Mr. Osgood at Kuna were also weighed, showing a gain of 660 lbs. on 36 head in 18 days with peas and oats. The initial average weight of these hogs was 92 lbs. The acreage of the field was disregarded on account of the very poor stands of both peas and oats.

North Platte.

Under date of September 30, Mr. Jones reports that a serious outbreak of cholera occurred in August on and near the Project. Dur-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

ing the month of September about 2300 head of hogs were treated in 40 herds. Only 12 of these herds were on the Project proper, the others being on irrigated land immediately adjacent to the Project.

The cholera in this outbreak seems to be more virulent than that of 1914. In the present instance, in about 50 per cent of the outbreaks, the older hogs are affected first and a good many of them have been lost. The results of vaccination have been reasonably good where the difficulty has been promptly reported, which as a rule has been the case. The educational effects of the work done two years ago are noticeable this year in connection with the promptness of reporting.

The disease so far has been confined to the extreme eastern portion of the Project and to the immediately adjacent lands. This is the district where sporadic outbreaks have occurred ever since the epidemic of 1914. It is believed that the dissemination of the disease in that district this fall results very largely from the great number of blackbirds in that vicinity.

The county fair held at Mitchell during the week of September 15 was the most successful fair ever held there. The swine exhibit was specially good, about 50 pens having been entered.

PASTURES IN THE BLUEGRASS REGION.

Department Bulletin 397, "The Grazing Industry in the Bluegrass Region", contains some data regarding pastures in the bluegrass region which it is interesting to compare with the results which can be secured from pastures on irrigated lands. The comparatively low returns secured from the unirrigated pastures doubtless explain much of the skepticism of new settlers on irrigation projects with respect to the value of irrigated pastures.

The bulletin states that "with the exception of Kentucky, most of the bluegrass lands are unsuited to general-crop farming. They are often too rocky or too steep to be plowed; yet these grazing lands sell readily for $75 to $150 an acre." These valuations are interesting in view of the returns secured from pasturing the land.

It is stated in the bulletin that many of the pastures in the bluegrass region are grazed by approximately the same number of cattle each year; that "these cattle are purchased one fall by weight and sold the next fall in the same manner", and hence that

Pastures in the Bluegrass Region (continued).

"it is possible to get definite figures as to the yearly gains produced. From this total gain must be deducted the cost of wintering, in order to find the net returns for the pasture."

An investigation was made of 22 bluegrass pastures, aggregating 4,237 acres and grazed by 1,328 head of cattle, in Virginia, West Virginia, and Kentucky. The bulletin states that these pastures were among the best in the localities visited, and that they do not represent the average for any large area, where presumably, the returns would be lower. The cost of the stocker cattle is placed at 7 cents a pound and the selling price at 8 cents. The returns from the pastures were determined by deducting from the increased value of the steers during the year the cost of wintering. The latter was based on the estimated values of the forage fed. Silage was valued at $4 a ton; corn, 60¢ a bushel; hay, $12 a ton; corn stover, $6 a ton; and straw, $4 a ton. The following table has been compiled from the table given in the bulletin showing the results secured from the 22 pastures above referred to:

	Acres Pastured	Acres per steer	Yearly gains, lbs. Per steer	Yearly gains, lbs. Per acre	Yearly returns per acre of pasture
Highest...	775	5.55	522	222	$14.08
Lowest....	50	1.80	300	68	2.10
Average...	193	3.19	386	121	8.60

It is seen that the pastures were large, the smallest of the 22 containing 50 acres, and the largest, 775 acres, the average area being 193 acres. The highest carrying capacity was at the rate of one steer to 1.8 acres; the lowest, one steer to 5.55 acres, and the average, one steer to 3.19 acres. The highest carrying capacity was secured in a 90-acre pasture, and the lowest in a pasture containing 100 acres. These low carrying capacities are interesting when compared with the carrying capacity of good irrigated pasture, which is about 4 to 6 times as high as the average given above.

Most of the cattle used were yearlings and two-year-olds. The average yearly gain on the different farms ranged from 300 to 522 pounds, the average gain of the 1328 head being 386 pounds. The data in the bulletin do not show how much of the yearly gain was made on pasture. The figures showing "yearly gains per acre" merely show the ration of total yearly gain to the acreage in pasture.

The last column in the above table shows the highest, lowest, and average returns per acre secured from the 22 pastures. These returns, as before mentioned, represent the total yearly increase in the value of the stock less the cost of wintering, and they are gross returns,

Pastures in the Bluegrass Region (continued).

that is, the cost of labor, taxes, fencing, etc., has not been deducted. On the irrigated lands, where the carrying capacity of pasture is from four to six times the average given for the pastures investigated in the bluegrass region, the returns are decidedly higher. The irrigation farmer can figure on a gross return of from $20 to $40, depending on market prices and the care given the pasture. When these returns are considered in connection with land prices in the two regions, irrigated pastures appear very favorably, and it is obvious why settlers from humid districts are at first so skeptical regarding irrigated pastures.

SWINE SUPPLY ESTIMATES.

Under the above title, the Monthly Crop Report for September contains a table showing the estimated number of stock hogs on hand in each state and in the United States on September 1, 1915, and September 1, 1916. The following table shows the total for the United States and for each of eleven western states.

	Stock Hogs on Hand.		Increase or
	Sept. 1, 1915.	Sept. 1, 1916.	decrease, %
United States..	68,256,000	65,645,000	-3.8
Montana	290,000	261,000	-10
Wyoming	70,000	71,000	+ 2
Colorado	300,000	297,000	- 1
New Mexico	90,000	101,000	+12
Arizona	40,000	50,000	+25
Utah	110,000	112,000	+ 2
Nevada	40,000	41,000	+ 2
Idaho	325,000	276,000	-15
Washington	310,000	264,000	-15
Oregon	375,000	319,000	-15
California	950,000	950,000	-
Eleven western states.....	2,900,000	2,742,000	- 5

Of the 11 western states, 5 had increases of from 2 to 25 per cent., and 5 had decreases of from 1 to 15 per cent., the total for the 11 states having decreased about 5 per cent. during the year. One state, California, showed no change. The report shows a decrease

Swine Supply Estimates (continued).

of 3.8 per cent. for the United States.

The present high prices for both grain and pork are likely to cause still further reduction in the swine population; and this in time will have an important influence in the maintenance of good prices for pork in 1917.

POLITICAL ACTIVITY OF EMPLOYEES.

Under date of September 20, the Chief of the Bureau calls attention to Memorandum No. 177, of the Office of the Secretary, entitled "Warning Against Activity in Politics by Officers and Employees of the Department of Agriculture." The Secretary's memorandum cites rules of the Civil Service Commission applicable to this subject which forbid political activity on the part of Federal employees.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Scottsbluff.

The week ending September 30 was spent chiefly in irrigating. About two weeks ago a petition was circulated asking that the water be run until about October 15, but about one week ago it was learned that the water would be shut out of the canal October 1. All of the farm force was therefore put to work irrigating. Most of the land was well gone over, and it is believed that more land has been irrigated this fall than in any previous year.

Truckee-Carson.

During the week ending September 23, the maximum temperature was 87; minimum temperature, 42; precipitation, .75 inch. For the week ending September 30, the maximum temperature was 85; minimum temperature, 38.

The corn varieties grown on the farm of T. Conners have been harvested. The summer months have been colder than usual, and the corn was nearly all immature when caught by the frost of September 10. Sample ears were reserved from each variety in order to determine relative maturity by loss in weight, and to get the shelling percentage. A statement of the results of this test will be given after all results are calculated.

The experiment in pasturing hogs in a field of wheat and field peas on the farm of C. G. Swingle has been completed. Thirty-four pigs, weighing 2140 pounds, were turned into 1-1/4 acres of mature wheat and field peas on September 7. On September 28, they were weighed and removed, the final weight being 3090. The net gain was 950 pounds from 1-1/4 acre, or a gain at the rate of 760 pounds per acre. Some wheat still remains in the field which will be picked up by stock hogs, but as supplementary feed will be necessary it would be difficult to determine its value. The profit obtained from the increase in weight of the hogs is estimated to be fully equal to the selling value of the crop grown if it had been harvested and thrashed in the usual manner. Mr. Swingle considers that the hogs have saved him the trouble of harvesting, threshing and marketing his grain.

The gains of the pigs in the alfalfa pasture experiment on the Experiment Farm became so low that they were removed to a dry lot on September 23. The gains made between August 19 and September 23

Truckee-Carson (continued).
are shown in the following table.

Item.	Pigs on alfalfa pasture. Area, .25 acre. Period, Aug. 19 to Sept. 9. 21 days. Lot I	Pigs on alfalfa pasture. Area, .25 acre. Period, Sept. 9 to 23. 14 days. Lot I
Number of pigs	10	6
Initial weight, lbs.	819	566
Final weight, lbs.	900	625
Total gain, lbs.	81	59
Daily gain per animal, lbs.	.39	.70
Daily gain, per cent	.45	.72
Barley fed, lbs.	349	159.8
Cost of barley @ $1\frac{1}{2}$¢	$ 5.24	$ 2.40
Value of gain @ 7¢	$ 5.67	$ 4.13
Net return	$ .43	$ 1.73
Net return per acre	$ 1.74	$ 6.92
Daily net return per acre	$ .08	$ .49

Item.	Lot II Aug. 19 to Sept. 6 18 days. .53 acre.	Lot II Sept. 6 to Sept. 23 17 days. .53 acre
Number of pigs	10	6
Initial weight, lbs.	969	507
Final weight, lbs.	1114	565
Total gain, lbs.	145	58
Daily gain per animal, lbs.	.81	.57
Daily gain, per cent.	.78	.67
Barley fed, lbs.	348	174
Cost of barley @ $1\frac{1}{2}$¢	$ 5.22	$ 2.61
Value of gain at 7¢	$ 10.15	$ 4.06
Net return	$ 4.93	$ 1.45
Net return per acre	$ 9.30	$ 2.74
Daily net return per acre	$ .52	$ .16

San Antonio.

Cool, pleasant weather prevailed throughout the week ending September 30. The maximum temperature was 92; minimum temperature, 49; and greatest daily range, 31. The first "norther" of the season reached the farm on Thursday morning. Several rather cool nights followed the "norther". A rain of 2.04 inches fell on Sun-

San Antonio (continued).

day night, September 24, which prevented any field work for several days.

Field work the latter part of the week consisted in harrowing all fallow rotation plats and general fields, in cultivating orchards, and picking cotton. Rescue grass was seeded in the pasture near the barn. Weeds and grass on waste land were mowed. During the wet weather, labor was utilized in completing the addition to the machine shed previously started, in extending water pipes to the hog lot, in taking up water pipe no longer in use, and in doing other miscellaneous work. Considerable time was spent in leveling the grounds around the new residence and in digging ditches for the laying of water pipes on these grounds.

Mr. G. B. Gilbert left for Washington on Thursday after spending nearly three months at the station.

During the week ending October 7, the maximum temperature was 91; minimum temperature, 58; greatest daily range, 33. There was no precipitation.

Field work during the week consisted in plowing, disking, mowing grass and weeds, hauling manure, and weeding. Plats B5-8 and A6-13 were plowed and field C4 was double disked. Sorghum on the rotation plats cut last week was raked and shocked. Johnson grass on miscellaneous fields was cut. Field C6 from which the Johnson grass is being eradicated was hoed. Parts of field C4 and C5 were weeded.

Laying of water pipes on the grounds surrounding the new residence was completed and other miscellaneous work was done.

Belle Fourche.

During the week ending October 7, the maximum temperature was 76; minimum temperature, 23; precipitation, .79 inch. A light snow fell on the night of the 7th instant.

Beets in the variety test in field P and beets after alfalfa in field O were plowed out and topped.

Husking corn in the dry land rotation was begun.

One four-horse team was at work part of the week breaking alfalfa sod in field A, and another breaking new ground in the horse pasture.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche (continued).

During the latter part of the week the men were employed fencing, leveling around the new barn, storing machinery, and cleaning up around the buildings.

The yields of potatoes in the irrigated rotations are given in the following table:

Rotation No.	Yield. Bus. per acre	Per cent. marketable	Stand in thousands per acre.
4	159.7	87.6	10.78
4a	175.0	71.4	10.97
20	157.0	54.9	9.82
21	169.7	69.4	10.03
24	151.3	74.5	9.87
25	162.0	59.2	10.23
26	149.0	*	10.12
27	154.3	64.3	10.00
30	166.0	71.8	9.75
31	188.0	76.2	10.04
40	129.2	64.8	10.08
44	149.0	71.4	10.25
60	118.7	67.3	9.74
61	123.7	69.2	10.00
Maximum	188.0	87.6	10.97
Minimum	118.7	54.9	9.74
Average	153.7	69.4	10.12

*Sample not taken.

The gains made by the spring pigs on corn in rotations 65 and 69 are given in the following tables:

Rotation 65.

Plat	Dates	No. of days	No. of pigs	Weights Initial	Weights Final	Gains. Total	Gains. % daily	Gains. per day per pig	Return per acre
AIII-15	9/16-9/26	10	3	312.5	366.5	54.0	1.59	1.80	$15.12
	9/26-10/6	10	3	366.5	418.0	51.5	1.34	1.72	14.42
Totals		20				105.5			$29.54

Belle Fourche (continued).

Rotation 69.

Plat	Dates	No. of days	No. of pigs	Weights Initial	Weights Final	Gains. Total	Gains. % daily	Gains. per day per pig	Return per acre
AII-29	9/16-9/26	10	3	299.0	340.5	41.5	1.33	1.38	$11.62
	9/26-10/6	10	3	340.5	377.5	37.0	1.03	1.23	10.36
Totals		20				78.5			21.98
AII-34	9/16-9/26	10	3	335.0	388.5	53.5	1.49	1.79	$14.98
	9/26-10/6	10	3	388.5	435.5	47.0	1.19	1.57	13.16
Totals		20				100.5			28.14
Both pens	9/16-10/6	20	6	634.0	813.0	179.0	1.28	1.49	$25.06

The results obtained from pasturing spring lambs on alfalfa and corn in rotation 71 are as follows:

Dates	No. of days	No. of sheep	Weights Initial	Weights Final	Gains. Total	Gains. % daily	Gains. per day per lamb	Return per acre.
9/7-9/16	9	10	663.0	706.5	43.5	.713	.435	$ 6.09
9/16-9/26	10	10	706.5	688.5	-18.0		-.18	-2.52
9/26-10/6	10	10	688.5	761.5	73.0	.98	.73	10.22
Total	29				98.5			13.79

The potato varieties were planted on alfalfa ground that had been broken to a depth of about six inches in October, 1915. Very little of the alfalfa was dead and the large amount of volunteer alfalfa seriously injured the growth of the potatoes. On at least two occasions the potatoes suffered from drought. This accounts for the extremely low yields. In general, early varieties of potatoes suffered less than the late varieties.

The yields of the potato varieties are given on the following page.

Belle Fourche (continued).

Yield of potato varieties, 1916, Field O.

Variety	No. of rows	Yield per acre	Per cent. marketable
Red River Acme	3	115.9	48
Extra Early Ohio	3	111.4	48
Gene Glover	1	109.2	62
Eureka	3	106.4	58
White Ohio	3	103.6	62
Cobbler	3	102.5	54
Albino	3	98.7	45
Early Ohio	3	98.0	41
Burbank	3	92.5	23
Peerless	3	90.6	47
Green Mountain	1	87.5	47
#4452	3	87.2	44
Pearl	1	84.2	48
Russet	3	78.9	17
#8114	2	77.5	27
Triumph	3	74.7	43
Rural New Yorker	3	66.7	20
Peach	3	62.5	10
Carmen #3	3	58.6	24
Sir Walter Raleigh	3	55.8	18
#15044	3	50.3	2
Old's Prolific	3	47.8	12

A variety test of root crops was carried on in field P. Yields of the different crops are as follows:

Yields of Mangelwurzels-Carrots, 1916.

Variety	Yield Tons per acre.
Half Sugar	29.76
Golden Tankard	24.63
Mammoth Long Red	23.75
Stock carrot	10.45

The yields of the potatoes in the fall irrigation experiment are given in the table on the following page.

Belle Fourche (continued).

	Fall Irrigated.			Not fall irrigated.		Difference, favor of fall irrigation.	
Plat	Tubers, bushels per acre	% marketable	Plat	Tubers, bushels per acre	% marketable	Tubers, bushels per acre	% marketable
PII-8	267.5	83	PI-8	225.0	83		
PIV-8	254.2	83	PIII-8	271.7	86		
Av.	260.9	83		248.4	84.5	12.5	-1.5

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Minidoka.

The first part of the week ending September 16 was spent with the officers of the Minidoka Project Cattle Grazing Association. The Black Pine Division of the Minidoka National Forest was visited and gone over and a homeward route mapped out. Conditions on the range were found to be unsatisfactory. The freeze on June 20 and the dry summer had made short feed. The Mud Springs, where the Project cattle are watered, are nearly dry so that there is not sufficient water to supply the herd. Cattle bearing the brands of many other outfits are on the range allotted to the Project cattle. Because of the shortage of feed it is difficult to hold any of the cattle. All, but especially the young stock, are beginning to show the results of the shortageand are getting thin. They are so restless that it is necessary for all the outfits to keep riders on the borders to prevent the cattle from leaving the Reserve and raiding the dry farms. All the cattle will be rounded up as soon as possible and brought to the home farms. The trip from the Reserve to the Project will be hard, as there will be a distance of approximately 70 miles with practically no feed.

The Third Minicassia Fair, which is practically a Project fair, was held at Burley during the week. This year there has been much more attention given to the live stock and agricultural exhibits so that they were much better than at the two former fairs. The attendance was large and the interest in the agricultural displays, the judging of the live stock, and the hog cholera exhibit of the Bureau of Animal Industry was very good.

The first killing frost occurred on the night of September 9. The thermometer stood at 30, as it did the following night. Potato vines, corn and garden products were killed. The growing season for these crops for this year was four months, from May 10 to September 9.

The Second Annual Minidoka County Fair was held at Rupert the latter part of the week ending September 23. This Fair is held for educational purposes only, and most of the attention is given to the agricultural and live stock displays. The live stock exhibits were not as large as last year. Only the cattle and horse departments were well filled, there being but few entries in the hog and sheep departments. The explanations generally given were that the farmers were too busy to show and, in the case of the hogs, the stock was not in good enough condition to make a good showing.

A milking contest and a grade dairy cow class aroused consider-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

able interest. Mr. Ireland assisted with the work, giving demonstrations of the types and breeds and conducting the milk and butter fat production demonstrations.

Plans are being worked out with the officers of the Sawtooth National Forest to put out two cooperative bands of sheep on the Forest Reserve next year. A permit for a stated number of sheep will be issued to the Project, the farm sheep owners to organize a grazing association and to set the limit for each owner in proportion to the number of men desiring range. For this particular reserve the applications need not be in until December 15. While the details are not yet worked out, it is hoped to have the permits granted and the organization formed for a five-year period.

Two outbreaks of hog cholera occurred on the Project the first part of the week ending September 30; one on the farm of Merry Aylor, one-half mile east of Rupert, and the other on the farm of A. B. Patterson, 8 miles southeast of Burley. Cholera had been on the Patterson farm in August, 1915. Mr. Patterson diagnosed the case correctly for himself and caught it in the incipient stage so that he lost only 2 shoats out of a total of 126. Of the remainder there were only 2 that were visibly sick. The case at Mr. Aylor's farm had run for several days. When visited on Sunday one large sow and 5 shoats were dead while several others were visibly sick. The herd was vaccinated on Monday. Of the 152 head vaccinated there were 9 high temperatures.

The State Live Stock and Sanitary Board has agreed to furnish the serum for this work at not to exceed 1 cent per cubic centimeter at the farms. They also have agreed to furnish the services of their local deputy, Dr. Sims, of Rupert, to assist with the vaccination and to take charge of the quarantine work and to supervise the disinfection of the farm without cost to the farmers. Dr. Sims assisted with the investigations of this week and vaccinated the Patterson herd at Burley.

Three other investigations were made. In one case the body was too badly decomposed to make any definite conclusion possible; the second was found to be trouble brought about by feeding sheaf barley to small shoats; and in the third, the hog had acute nephritis and pneumonia.

A part of the week was spent at Boise in conference with the State and College officials, and with the stockmen from the different sections of Idaho.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley.

Four farm visits were made during the week ending September 30.

The Montana State Fair was attended at Helena for the purpose of locating and inspecting breeding stock for Project farmers. Some very fine animals were exhibited at Helena, but the prices asked for desirable breeding animals are very high. This is especially true of sheep. A pure bred buck with any merit at all can not be bought for less than $50.00, and they are very scarce at that price. Rather good yearling dairy bulls can be bought for $150 to $200 per head.

Uncompahgre.

Fifteen farm visits were made during the week ending September 30. Requests for services and information were received from 11 farmers. Arrangements were made with one farmer for the testing of his dairy cows for butterfat.

The greater part of the week was spent in making farm visits relative to silo filling and in the work of getting in touch with farmers who were interested in the importation of dairy cows. A meeting was held at the office on Saturday in this connection. It was found that, while there are a number of farmers anxious to take part in the bringing in of cows, there are others who wish to dispose of their crops before saying definitely what they wish to do. Both grades and pure breds are wanted. It is the plan to bring them from Wisconsin. It was hoped to get enough in line to bring in 50 animals this fall.

Silos are about all filled on the Project. The weather conditions were very favorable for the full maturity of the corn this season.

A cheese factory has just been completed at Delta for the handling of milk near that point. The Delta business men put in the plant and a cheese factory man from Lazear is to have charge on some kind of commission plan. The particulars have not all been learned.

Hog shipments are being made at regular intervals and the prices are down somewhat. Seven carloads were shipped, all cooperatively, during the week. In 3 shipments the farmers handled their own business. In the other the shipment was handled by the Grange, which maintains a warehouse in Montrose. They have been handling the hogs on a 1% commission basis. This plan has been giving satisfaction, especially to small owners.

Butterfat is still 32 ¢.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise.

The entire week ending September 30 was given to work with the "Gem State Fair" at Boise, and two district fairs.

Exhibits at the Boise Fair compared favorably, as a whole, with other years. In the live stock department beef breeds were represented by entries of Aberdeen Angus, Herefords and Shorthorn; dairy breeds were represented by Holstein-Friesian, Guernsey and Jersey; "dual-purpose" breeds by Red Poll. The swine show was strong, competition being keen among Poland Chinas and Duroc Jerseys. Two herds of Berkshires were also present. Cotswold, Lincoln, Hampshire, Shropshire, Orford and Rambouilet sheep were represented; though competition was not strong except in Hampshire classes. The horse show was unusually and unaccountably light, especially in the draft classes.

Interesting features of the live stock exhibits were 14 pigs shown by members of pig clubs and 6 lambs shown by members of the first lamb club.

A students' stock-judging contest was held one day with 32 entrants. Beef cattle, dairy cattle, draft horses and hogs were judged. Written reasons were required for each class. The interest taken in the contest by the students was very encouraging and the work of the majority was quite creditable.

Truckee-Carson.

During the week ending September 30, 28 calls for assistance were received, and 17 farms were visited.

Considerable time was devoted to cooperative hog marketing. One car load was shipped to Reno, on Monday. Prime hogs brought 8-1/4 cents. Light hogs, weighing around 100 pounds, brought 7-1/4 cents. The transportation cost to Reno was $23.75 per car. In addition to the light transportation cost, a small shrinkage was expected. The shipping time was 15 hours. The shrinkage, however, was about the same as with the last load shipped to San Francisco, as the time off feed before weighing in the latter instance was only 6 hours. The net results from shipping to Reno amounted to about 40 or 50 cents per hundred less than from the last load shipped to San Francisco. Unless a better price is offered by the Reno people, future shipments will probably go on to San Francisco.

All the hogs in this shipment were marked by clipping the hair close on different parts of the body by means of barber clippers. This makes a very convenient mark for identification at the selling point.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued).

A trip was made to Reno to superintend the marketing of the last car load of hogs. One of the shippers accompanied the car.

Much time in the past two weeks has been devoted to the taking of blood samples for abortion tests. The tests are made by the Veterinary Department of the University of Nevada, free of charge. Fifty-one samples were taken in three different herds. The exchange of dairy animals in three different herds depended on the outcome of the tests. Out of the first 41 samples so far tested only one reactor was found. It is a common practice in this locality now to have prospective buyers insist on the abortion and tuberculin tests. The interdermal test was also applied to 7 animals during the week with no reaction.

The organization of a cooperative cow testing association for this Project is now well under way. Considerable time has been spent during the week with Mr. V. E. Scott, of the western office of the Dairy Division, in this work. Five hundred and ten cows, belonging to 24 dairymen, have so far been entered with many of the most progressive dairymen yet to be canvassed. An article will be submitted to the local papers setting forth the advantages and purposes of the association. It is hoped that the work of the Association will be under way by the middle of October.

Shoshone.

During the week ending September 30, 16 farm visits were made, and 6 men called at the office. Most of the time was given to discussing grass pasture tests, hog feeding, sheep management, hog house construction, use of sweet clover, and cow abortion.

The creamery is paying 33¢ per pound for butter fat, which is 6¢ more than was paid at this time last year.

An outside buyer is paying $8.00 per cwt. for stock hogs, and a good many of the farmers are selling to him.

PERSONAL.

Mr. G. A. Wood has been transferred to the Office of Farm Management, to take the position as Chief Clerk of that Office on October 15. Mr. H. S. Smith succeeds to the position of head clerk of the Offices of Western Irrigation Agriculture and Demonstrations on Reclamation Projects.

ERRATUM.

On Page 158, Vol. X, Weekly Bulletin, issue of October 7, 1916, the word "ration" in the fifth line from the bottom of the page should be corrected to read "ratio".

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Truckee-Carson.

During the week ending October 7, the maximum temperature was 62; minimum temperature, 25; precipitation, .85 inch.

Mr. Headley made a trip to Reno on Tuesday for the purpose of having milling tests made on the wheat varieties grown this year. Tests will be made by the Riverside Mill Company and by the agronomist at the University.

The third crop of hay was cut during the last week in September. A part of it was hauled and stacked but the remainder was caught by the rains early in October, and is still in the field.

Field F has been divided into north and south portions by a road running east and west through the center. A six-year rotation has been planned as follows: Alfalfa-3 years, followed by potatoes, sugar beets and grain. Four checks out of the 16 will remain permanently in alfalfa. The 6 plats which are to be in cultivated crops next year have been plowed.

Scottsbluff.

Most of the week ending October 7 was put in husking the corn. The corn is much softer than was expected at first. The yields, however, will be fairly high. As soon as the corn is husked, it is hoped to fill the silo.

The pigs were brought in from the field and put in the dry lot. On account of the cold weather the alfalfa has made no growth for the past three weeks.

The following table shows the results of the dairy work for the month of September, 1916.

	Butter Fat.				Skim Milk		
Milk, Pounds	Av. Test	Total Pounds	Market Price	Value of	Total Pounds	Market Price	Total Value
Mable 643.9	3.0	19.31	31¢	$5.99	547.32	25¢	$1.37
Marie 623.9	3.0	18.71	31¢	5.80	530.32	25¢	1.33
Maud 494.6	3.7	18.3	31¢	5.67	420.41	25¢	1.05
Hulda 372.5	3.2	11.92	31¢	3.70	316.63	25¢	.79

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Scottsbluff (continued).

The yields of alfalfa, oats and wheat from field K are given in the following tables. The other crops in the field are not yet harvested.

The first cutting of alfalfa was low, as will be noted in the table; this was due to hail. The plats in the south end of the field were damaged much more than the plats at the north end. The oats were also damaged by hail, to such an extent that 6 plats were reseeded on June 8. All plats were damaged more or less. Rust cut the wheat yield down to almost nothing.

Yield of alfalfa from field K, 1916.

Plat No.	Rotation No.	Lbs. per cutting per plat *1st	2nd	3rd	4th	Total yield for season, Tons per acre.
K-I-6	65	515	1061	980	791	6.89
-11	65	--	334	850	550	3.47
K-II-6	61	415	1008	910	724	6.11
-7	61	455	1044	1020	782	6.60
-15	40	80	853	920	#675	5.06
K-III-6	60	328	863	920	703	5.63
-7	60	286	960	930	747	5.85
-15	42	94	827	910	640	4.94
K-IV-6	62	400	804	850	658	5.42
-7	62	262	869	910	775	5.63
-14	44	--	326	840	560	3.45
-15	44	238	1045	850	690	5.65
K-V-1	8	780	970	840	532	6.24
-14	48	42	649	760	460	3.62
-15	48	228	925	910	610	5.35

* The first cutting was damaged greatly by hail. This was especially true of the plat at the south side of the field.

The weight of this plat was lost but it was similar to plats K-III-15 and K-IV-15. The weight here recorded is the average of these two plats.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Scottsbluff (continued).

Yield of oats, field K, 1916.

Plat No.	Rotation No.	Pounds per plat	Bushels per acre
K-I-3	1	317	39.6
-5	27	425	53.1
-10	65	534	66.7
-12	23	410	51.3
-15	25	284	35.5
K-II-3	31	571	71.4*
-9	61	446	55.7
K-III-3	30	510	63.7*
-9	60	451	56.4
-12	42	437	54.6
-16	22	393	49.1
K-IV-2	16	461	57.6*
-3	32	546	68.2*
-9	62	386	48.2
-13	44	494	61.7*
-17	24	448	56.0*
K-V-13	48	328	41.0
-17	28	264	33.0

*These 6 plats were reseeded on June 8. Kherson oats were used.

Yield of wheat, field K, 1916.

Plat No.	Rotation No.	Pounds per plat	Bushels per acre.
K-III-1	18	120	8.0
-18	5	--	--
K-IV-18	7	97	6.5
K-V-12	48	158	10.4
-16	28	89	6.0
-18	3	84	5.6

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley.

During the week ending September 30, the maximum temperature was 81; minimum temperature, 26; precipitation, .02 inch.

Stacking of third crop of alfalfa was completed. Alfalfa seed in field A was threshed. The yield of alfalfa in field A for the season is given in the following table.

Plat No.	Yield per acre, Tons.			
	1st crop	2nd crop	3rd crop	Total
A-I-6	2.74	2.40	1.60	6.74
-7	2.90	2.30	1.56	6.76
-8	2.98	2.77	1.62	7.37
-9	2.78	2.25	1.40	6.43
-10	2.82	2.20	1.58	6.60
-11	2.70	3.10	1.41	7.21
-12	2.78	2.25	1.56	6.59
-13	2.92	3.03	1.67	7.62
-14	3.02	2.74	1.61	7.37
-15	2.66	2.72	1.58	6.96
Average	2.83	2.57	1.56	6.96

In the red clover and alsike clover and grass mixtures in field L, in methods-of-planting test, a crop of hay was harvested on September 21 on the plats that were planted without a nurse crop in April, 1916. These plats were all clipped three times, earlier in the season, to prevent weeds from seeding. The yields of these crops are given in the following table.

Crop or Mixture	Yield.		
	Plat No.	Plat, Lbs.	Acre, Tons
Alsike clover	L-I-3	292	.58
do	L-II-3	362	.72
Average		327	.65
Red Clover	L-I-11	936	1.86
do	L-II-11	874	1.74
Average		905	1.80
Grass Mix. #1	L-III-3	374	.74
do	L-III-15	460	.96
Average		417	.85
Grass Mix. #2	L-III-7	82	.16
do	L-III-19	146	.29
Average		114	.22
Grass Mix. #3	L-III-11	552	1.10
do	L-III-23	124	.25
Average		338	.67

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).

The grasses in the mixture and the rate of seeding of each were as follows:

Grass or Clover	Mixture No. 1. Rate of seeding per acre, Lbs.	Mixture No. 2. Rate of seeding per acre, Lbs.	Mixture No. 3. Rate of seeding per acre, Lbs.
Brome grass	2	2	-
Orchard grass	5	5	5
Tall fescue	3	3	3
Perr. rye grass	3	3	-
Ken. Blue grass	4	4	4
White clover	2	-	2
Alsike clover	2	-	2
Total	21	17	16

The yields of alfalfa in the irrigated rotations, fields K and L-IV, for 1916, are given in the following table.

Rotation No.	Plat No.	Tons per acre, per cutting. 1st	2nd	3rd	Total tons per season. spring seeded	2nd yr.	3rd yr.	CC
CC	K-I-*	2.80	1.55	1.58				5.93
CC	-II-*	2.69	1.72	1.80				6.21
CC	-III-*	1.73	1.19	1.00				3.92
8 CC	-IV-22	1.59	1.11	1.16				3.86
40 CC	-1	.88	1.14		2.02			
40 D	-2	2.04	1.30	1.41		4.75		
42 C	-7	.76	1.36		2.12			
42 D	-8	2.12	1.49	1.70		5.31		
44 C	-11	.52	1.19		1.71			
44 D	-12	2.14	1.52	1.26		4.92		
46 C	L-IV-13	.75	.98		1.73			
46 D	-12	.81	1.06		1.87			
60 F	K-III-9	.73	1.26		1.99			
60 A	-10	2.03	1.56	1.72		5.31		
60 B	-11	2.48	1.58	1.86			5.92	
61 F	-3	.92	1.45		2.37			
61 A	-4	2.31	1.75	1.77		5.83		
61 B	-5	2.63	1.98	1.99			6.60	

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).
Yields of alfalfa in irrigated rotations (continued).

Rotation No.	Plat No.	Tons per acre per cutting. 1st	2nd	3rd	Total tons per acre. spring seeded	2nd yr.	3rd yr.	CC
64 F	L-IV-20	.83	1.05		1.88			
64 A	-19	.78	1.13		1.91			
64 B	-18	.85	1.01		1.86			
67 F	K-II-3	.84	1.35		2.19			
67 A	-4	2.27	1.45	1.70		5.42		
67 B	-5						Hogged	
69 F	L-IV-27	.89	.98		1.87			
69 A	-26	.98	.93		1.91			
69 B	-25	1.04	1.05		2.09			
CC-A	-14	.49	1.03		1.52			
Maximum		2.80	1.98	1.99	2.37	5.84	6.60	6.21
Minimum		.49	.93	1.00	1.52	4.75	5.92	3.86
Average		1.44	1.30	1.58	1.93	5.26	6.26	4.98

* Triangle.

During the week ending October 7, the maximum temperature was 81; minimum temperature, 22; precipitation, .4 inch.

Sugar beet harvest in field L-IV was begun on October 4. A scarcity of beet workers and wet, disagreeable weather are at present causing slow progress in getting out the beets.

The alfalfa plats in field K are being crowned as rapidly as the weather permits.

The two lots of spring pigs used in hogging of corn, in rotation 69, field L-IV, and rotation 67, in field K, are making rapid gains. The larger total gain was made by the pigs on corn alone, but corn and rape gave the greater percentage daily gain. The results obtained from the two lots for the first ten-day period, September 23- October 3, are given in the following tables.

Spring pigs - Hogging off corn and rape, Field L-IV-23-24, Rotation 67.

No. of hog	No. of days	Weight. Initial	Final	Gain	Av. daily gain	% daily gain
78	10	85	108	23	2.3	2.40
79	10	78	96	18	1.8	2.10
80	10	85	104	19	1.9	2.05
82	10	82	102	20	2.0	2.14
Total		330	410	80	8.0	
Average		82	102	20	2.0	2.17

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).

Spring pigs - Hogging off corn, field K, Rotation 67.

No. of hog	No. of days	Weight. Initial	Final	Gain	Av. daily gain	% daily gain
76	10	97	119	22	2.2	2.08
77	10	93	114	21	2.1	2.07
81	10	102	125	23	2.3	2.06
83	10	87	105	18	1.8	1.93
Total		379	463	84	8.4	
Average		95	116	21	2.1	2.04

Belle Fourche.

During the week ending September 30, the maximum temperature was 87; minimum temperature, 32; precipitation, .19 inch.

The alfalfa in field P was mowed, raked, and cocked. Digging potatoes in fall irrigation experiment in field P, and in the irrigated rotations, was completed.

A four-horse team has been at work all week plowing in field O.

Some of the men were employed the latter part of the week sorting potatoes and cleaning up.

Gains made by the spring pigs turned on corn in rotations 65 and 69, from September 16 to 26, are as follows:

Rotation 65

Lot	Plat	No. of days	No. of pigs	Weights Initial	Final	Gains. Total	% daily	per day per pig	Return per acre
1	III-15	10	3	312.5	366.5	54.5	1.59	1.8	$15.12

Rotation 69

1	II-29	10	3	299.0	340.5	41.5	1.33	1.38	11.62
2	II-34	10	3	335.0	388.5	53.5	1.49	1.79	14.98
Totals		10	6	634.0	729.0	95.0	1.41	1.6	13.30

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche (continued).

The pigs in rotation 65 and those in lot 2, of rotation 69, have been allowed to run on the alfalfa plats previously pastured on these rotations. However, there has been very slight growth of this alfalfa. The rape seeded in the 2 corn plats of rotation 69 made very unsatisfactory growth and the pigs are receiving no benefit therefrom.

The third cutting of alfalfa in the irrigated rotations was hauled and put in the mow in the new barn. Yields from rotations are given in the following table.

Alfalfa yields, field A, 1916.

Plat	Rot. No.	Year	Yield, Tons per acre. 1st cutting	2nd cutting	3rd cutting	Total for season.	Average
A-I-51	8	5th	1.30	1.71	.59	3.60	
III-24	8a	5th	1.60	2.03	1.07	4.70	4.15
II-35	71	4th	1.26	1.20	1.06#	2.40	
III-36	71	4th	1.16	1.37	.88	3.41	3.46
I-10	60	3rd	.96	1.71	.90	3.57	
II-8	62	3rd	1.52	1.75	1.03	4.30	
II-14	61	3rd	1.36	1.82	1.09	4.27	4.04
I-4	40	2nd	1.34	1.52	.86	3.72	
I-8	42	2nd	1.20	1.61	.84	3.65	
I-9	60	2nd	1.28	1.63	.98	3.89	
II-7	62	2nd	1.44	1.65	.93	4.02	
II-13	61	2nd	1.64	1.86	1.26	4.76	
II-22	48	2nd	1.76	2.14	1.30	5.20	
II-32	69	2nd	1.36	1.63	.96	4.95	
III-13	65	2nd	1.36	1.42	1.06	3.84	
III-22	44	2nd	1.64	1.60	1.12	4.36	4.27
I-3 *	40	1st	.77	.60		1.37	
I-7 *	42	1st	.61	.56		1.17	
I-14*	60	1st	1.01	.83		1.84	
II-12*	62	1st	.78	.78		1.56	
II-18*	61	1st	1.16	.92		2.08	1.60
II-21**	48	1st	1.34	1.74	1.34	4.42	
II-31**	69	1st	1.04	1.37	.80	3.21	
III-18**	65	1st	.62	.78	1.02	2.42	
III-21**	44	1st	.72	.80	1.08	2.60	3.16

* Spring seeded, 1916.
** Fall seeded, 1915.
# Pastured with spring lambs; yields estimated by average of 3rd cutting.

The maximum, minimum, and average yields in tons per acre were as follows: 1st cutting, 1.76, .61, 1.21; 2nd cutting, 2.14, .56, 1.40; 3rd cutting, 1.34, .59, 1.01: The maximum yield for the season was 5.20; minimum, 1.17.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche (continued).

The results from pasturing sheep on the south end of A-II, and spring lambs on alfalfa and corn in rotation 71 are given in the following tables.

South end of A-II.

Dates	No. of days	No. of sheep	Weights. Initial	Weights. Final	Gains. Total	Gains. % daily	Gains. per day per sheep	Net return per acre
5/29-6/8	10	10	1419.5	1466.5	47.0	.28	.47	$3.29
6/8-6/17	10	10	1466.5	1446.0	-20.5			-1.44
6/17-6/27	10	10	1446.0	1498.5	52.5		.525	3.675
6/27-7/7	10	10	1498.5	1467.5	-31.0			-2.17
7/7-7/18	10	10	1467.5	1538.0	70.5	.452		4.94
7/18-7/28	10	10	1538.0	1529.5	- 8.5			- .60
7/28-8/7	10	10	1529.5	1512.5	-17.0			-1.19
8/7-8/17	10	10	1512.5	1528.5	16.0	.092	.16	1.12
8/17-8/28	11	10	1528.5	1553.5	25.0	.126	.227	1.75
8/28-9/7	10	10	1553.5	1576.0	22.5	.126	.225	1.57
9/7-9/16	9	10	1576.0	1674.5	98.5	.69	1.09	6.90
9/16-9/26	10	10	1674.5	1686.0	11.5	.06	.115	.80
Totals	120				266.5			$18.65

Spring lambs on alfalfa and corn, Rotation 71.

9/7-9/16	9	10	663.0	706.5	43.5	.713	.435	$6.09
9/16-9/26	10	10	706.5	688.5	-18.0		-.18	-2.52
Totals	19				25.5			$3.57

The 10 sheep at south end of A-II were removed from this pasture to field K.

Lambs on rotation 71 have all lost slightly during the last 10-day period. The growth of third crop alfalfa on plat A-II-35 was badly checked by frost the night of September 14, since which time the lambs have gotten little benefit from green pasture. The corn also was killed at this time and the lambs are eating fodder and grain very sparingly.

Umatilla.

During the week ending September 30, the maximum temperature was 78; minimum temperature, 29.

Clover in field A4 was plowed under. Two crops were harvested from this land and the third, which was rather light, was turned un-

Umatilla (continued).

der, according to the schedule for soil fertility experiment No. 3, this being the close of the second year for clover in the rotation of clover two years; corn, one year; and potatoes, one year.

The standing rye was disked in to reseed the land on all unused fields.

Notes were taken on the growth, degree of maturity, and yield of grain and stover of feterita on the rotation plats in field D4. On account of the coolness of the season the feterita was late, and only a small proportion of the heads matured.

Weights of the alfalfa hay, and feterita stover from rotation plats in field D4 are given below. The weights of hay on plats 1, 2 and 3, in each series, includes 4 crops while only 3 crops were taken from plats 4, 5 and 6, in each series, the 4th crop being plowed under.

Yield of hay on rotations, field D4

	No manure.		8 tons manure per acre.		32 tons manure per acre.	
	Plat	Tons per acre	Plat	Tons per acre	Plat	Tons per acre
	A-1	3.86	A-2	5.36	A-3	6.30
	-4	* 4.00	-5	* 5.66	-6	* 6.22
	B-1	4.06	B-2	6.18	B-3	7.36
	-4	* 4.00	-5	* 5.26	-6	* 6.64
	C-1	6.00	C-2	7.58	C-3	8.84
	-4	* 4.38	-5	* 6.22	-6	* 7.12
Av.	3 crops	4.13		5.71		6.66
Av.	4 crops	4.64		6.37		7.50

* 4th crop on half the plats was turned under.

Yield of feterita stover on rotation plats, field D.

No manure.		8 tons manure per acre.		32 tons manure per acre.	
Plat	Stover, tons	Plat	Stover, tons	Plat	Stover, tons.
A7	.68	A8	2.48	A9	3.30
A10	.74	A11	2.10	A12	2.90
B7	1.16	B8	3.00	B9	4.26
B10	.74	B11	1.84	B12	2.42
C7	.08	C8	1.00	C9	2.42
C10	.10	C11	.52	C12	2.20
Average	.58		1.82		2.91

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Umatilla (continued).

During the week ending October 7, the maximum temperature was 70; minimum temperature, 22; precipitation, trace.

Field notes on feterita in D4 were completed, but grain can not be threshed for some time, as it is not cured. The fourth crop of alfalfa was plowed under on plats 5 and 6 in each series, and the land sown to vetch. The annual application of manure was spread on plats in this experiment. Vetch was sown on field A4 where the third crop of clover was plowed under recently.

By the use of 9 plats of alfalfa in C1, a determination was made of the amounts of hay produced at three and four cuttings. The plats were numbered in order and the odd numbers allowed to produce four crops while the remaining plats produced three crops. The first and last cuttings on all plats were made together.

From the four crops, an average yield of 6.59 tons per acre was obtained from the 5 plats used. The four plats on which three crops were grown yielded an average of 6.15 tons per acre. The difference in yield by no means justifies the labor of cutting an additional crop. There is a great difference in quality of hay, the four crop product being much better than the other. The horses do not like the 3-crop hay, and will not eat it well. The four-crop hay is relished by them, and is entirely eaten up.

During the week ending October 14, the maximum temperature was 76; minimum temperature, 21.

The unusually dry fall season is working a hardship upon vetch and other crops that were expected to use moisture from fall rains for their late growth. The season is quite similar to last fall when orchard lands became so dry that considerable winter injury resulted. Field A3, which was sown on moist land, which, under ordinary conditions should not have required irrigation, became dry and was irrigated.

A satisfactory stand of alfalfa was not secured in field A3 (for the determination of width of borders on amount of water required to irrigate the land), and rye was sown to prevent the land from blowing, and to provide protection for alfalfa that will be sown in the spring.

The east fence of the farm which forms the boundary of field C2 was taken down, the flume that paralleled it removed, and the land regraded preparatory to putting in a new flume.

The total application of water and percolation from the lysimeters were as follows for the season:

Field Notes.

Umatilla (continued).

To each was applied 47 acre inches of irrigation water and 3.3 inches precipitation.

Lysimeter No. 1, no crop, yielded 38.536 inches percolate.
" " 2, vetch and soy beans, yielded 20.978 inches percolate.
" " 3, alfalfa, yielded 6.194 inches percolate.
" " 4, alfalfa plus manure, yielded 5.874 inches percolate.

Yuma.

During the week ending September 30, the maximum temperature was 97; minimum temperature, 53; greatest daily range, 41. Twenty-two acres were irrigated.

Castor beans are being harvested from B-21. The alfalfa on farm roads was cut. The deciduous orchard, date plats A-18 to 21, pecans on F-1, and date row along the north and east farm roads were hoed. C-39 to 41, alfalfa plats, were renovated.

A 600-pound Fairbanks platform scale was added to the equipment.

During the week ending October 7, the maximum temperature was 86; minimum temperature, 38; greatest daily range, 43. Thirty-two acres were irrigated.

Leveling was continued on C series. The grounds were mowed and ground plantings hoed and trimmed. Manure was hauled on A-10-3, and disked in with the cowpeas. Later it was deeply plowed and will be used for a garden test plat.

Crops were harvested from plats D-12, millet, C-23 and 27, alfalfa, and B-18, Jerusalem artichokes. B-9 and 10, alfalfa plat, was plowed under. C-18, pomegranates, C-28, alfalfa, and an acre of nursery plats were cultivated.

The steers on the pasture experiment were weighed. The gain for the month was 41 per cent. less than for the month of August, due to the shortage of pasture.

The Reclamation Service is operating a "V" in cleaning the north lateral.

Mr. R. A. Oakley, of the office of Forage Crop Investigations, and Mr. F. L. Goll, Assistant in Soil Bacteriology Investigations, visited the station during the week.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Boise.

The "Idaho State Fair", held at Caldwell during the week ending October 7, was one of the most successful ever held here, from the standpoints of favorable weather, attendance, exhibits and competition among exhibitors. Except in the dairy cattle and sheep classes, live stock departments were filled better than at Boise, the hog show being especially strong with more than 300 entries. Futurity shows of both Poland China and Duroc-Jersey breeds were held. In the Poland China futurity, Wilson Bros., of Greenleaf, on the Boise Project, received $10 more in awards than any other individual or firm showing at any of the 16 Poland China futurities held in the United States this year.

A 48-hour milking contest has been held at the Caldwell Fair for several years with liberal awards for the winners. This year there were 12 cows entered but they were owned by only 4 men. The contest is of doubtful value as the cows never do themselves justice under the unusual surroundings.

The students' stock-judging contest was not as satisfactory as the one at Boise last week. There were fewer entries and the work was not as good. A class of boys from the Star schools, Ada County, several of whom were among the winners in the Boise contest, took every premium offered at the Caldwell contest.

Boys' and girls' club exhibits were outstanding features of the Fair. There were 13 club pigs shown while the exhibits of potato clubs, corn clubs, garden clubs, etc., were considered by many as the most impressive features of the Fair.

A call was received this week to examine a herd of hogs suspected of having cholera. No animals had died and a diagnosis could not be made, but symptoms did not indicate cholera and no further trouble has been reported.

The tuberculin test was applied to a herd of 5 dairy cows, one of which was suspected by the owner of having tuberculosis. This animal showed a typical reaction to the thermal test while none of the others gave any reaction whatever.

Summary of Fifth Month's Results in Cow Testing Association.

During the month ending September 15, which was the fifth month that the cow testing association has been in operation, there were on test a total of 406 cows. Of this number, 41 produced 40 pounds or more of butter fat during the month. The highest production during the month was 80.14 pounds, produced by a 5-year old grade Guern-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

sey cow which freshened July 2. Ten herds had an average of 30 pounds or more per cow for the month. The names of the owners of these herds, the breeds, the number of cows, and the average production of butter fat per cow in each herd, are shown below:

J. S. Hulbert,	Holsteins,	15 cows	42.05 lbs.
David Tate,	G. Jerseys,	3 "	38.69 "
Jacob Betts,	G. Jerseys,	4 "	36.45 "
S. Lee,	G. Jerseys,	8 "	34.09 "
A. Records,	G. Holsteins,	3 "	34.50 "
Avalon O. Co.,	Holsteins,	13 "	33.49 "
J. U. Wuest,	G & P Guernseys,	19 "	32.34 "
Leo Marsters,	G. H. & G. J.,	28 "	31.44 "
H. A. Wines,	G. Guernseys,	8 "	31.24 "
J. T. Fubanks,	G. Jerseys,	7 "	30.56 "

Gratifying results of the association work are showing up in the culling of unprofitable cows. It is expected that a number of such cows will be sent to the block within the next few months. It is reported that the cow testing association at Buhl, Idaho, sold as beef during the first year of its operation, 70 unprofitable cows.

Huntley.

During the week ending October 7, 7 farm visits were made, and 2 farmers requested assistance in keeping records of their dairy herds.

A report of a hogging test with corn on Paul Sherman's farm is given below:

On August 31, 151 hogs, average weight, 123.8 lbs., were turned into 15.2 acres of corn, which was of good quality, and it was estimated would yield 27½ bus. to the acre. The hogs were of good quality and in good shape for making rapid gains. In addition to the corn the hogs had access to a 10-acre field of rather poor alfalfa, which they had grazed all summer. It is believed that the hogs received very little benefit from the alfalfa while hogging off the corn, as they grazed it very little during this period, and no value is assigned to the alfalfa in the following table. The hogs had consumed practically all the corn by September 21, and were re-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley (continued).

moved and shipped to market on that date.

Date begun	Aug. 31, 1916.
Date closed	Sept. 21, 1916.
Number of days	21
Number of hogs	151
Initial weight, pounds	18695
Average initial weight, pounds	123.8
Final weight, pounds	24645
Average final weight, pounds	163.2
Total gain, pounds	5950
Average daily gain, pounds	1.87
Area of corn hogged off, acres	15.2
Gain per acre, pounds	391
Estimated yield per acre, bushels	27.5
Value of gains @ 7¢ per pound	$416.50
Pounds of corn required to produce 100 pounds gain on basis of estimated yield	394
Returns per acre corn hogged off	$27.40
Average price received for corn in field, on basis of estimated yield, per bushel	$1.00

Shoshone.

During the week ending October 7, 8 farm visits were made, and office conferences were held with 6 farmers.

One of the farmers is being assisted in changing the construction of his hog house. His house consists of one row of pens and faces south. The front can be closed entirely. The openings for the sows to enter their pens are closed with doors which are hinged on the side. Sunshine is admitted through an opening about 2 ft. high, which extends the length of the house and is closed with board shutters which are hinged at the top so that they can be raised and fastened to the wall above the opening. The top of each door comes up to the lower edge of this opening so that by opening both door and shutter the owner can easily go into the pen for cleaning, arranging bedding, or caring for sows and pigs. The objection to having the doors hinged at the side is that the sows tend to break the doors down and the bedding gets in the way. It has been suggested that doors should be constructed so as to slide up and down in grooves

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone (continued).

made by nailing cleats on the studding. The sows could not break these down so easily and the bedding would not interfere with closing them. When it is desired to open the door with the shutter closed, the door could be raised in the grooves and fastened up. When it is desired to open both door and shutter for admitting sunlight or for the entrance of a person, the shutter could be opened first and then the door could be lifted to a point where it could be taken out of the grooves, since the shutter would serve as the upper part of the outside cleat, and when the shutter was open the door could be removed.

Truckee-Carson.

During the week ending October 7, considerable time was devoted to organizing a cow testing association on the Project. The organization was finally perfected on Saturday. A minimum of 600 cows was secured. This number will no doubt be greatly increased, because all the members have more cows than they signed up for. Each man signed for the minimum he would be milking at any one time. The officers of the association consist of a president, vice president and secretary. These officers also constitute the board of directors. The expenses of the association will be met by a charge of 12½¢ per cow per month for those cows on test for the month. The 600 cows are in 28 herds. It will be necessary for some of the smaller herds which are close together to be grouped for testing. Additional herds may be taken into the association, provided they may be grouped with other herds. This will necessitate a slight change of milking time in the herds that are grouped in order that the tester may take samples from more than one herd during the day.

Mr. V. E. Scott, of the western office of the Dairy Division, has been largely responsible for the organization of the association.

On Friday, October 6, a lantern slide lecture on dairy cattle conformation was given before the agricultural class of the County High School.

Two circular letters were issued during the week, one on pink eye in cattle, and the other on marketing turkeys.

An article on the prospective cooperative cow testing association was contributed to the local papers the first of the week.

Uncompahgre.

The weather has been very rainy during the week ending October 14, and the roads have been impassable the greater part of the time.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

A great deal of hay has been damaged during the rainy weather. The third cutting of alfalfa has been down for two weeks, and in many cases has not been raked. This has resulted in an advance in hay prices, which have reached $12.00 per ton.

Hogs are being sold very rapidly. Hogs of all sizes are going to market. The present price is $8.80 on the Project. One of the breeders of pure bred hogs reports no demand for breeding stock at present.

A sale was attended during the week of grade Holsteins and common red cows and heifers. There were 11 cows and heifers sold at prices ranging from $60 to $111 per head. There were also 11 calves sold at $25 to $40. The interest was strong for the red cows which sold a little better than those having black and white markings. The stock was mostly inferior and sold in most cases for more than it was worth. There is renewed interest in the shipment of cows from the East. The plan of bringing in stock at actual cost is favored by the farmers much more than purchasing from dealers. A dealer brought a carload of Holsteins to Delta the latter part of the week from central Utah. A number of prospective buyers looked them over and reported them as very inferior in size and quality.

Two outbreaks of blackleg on Project farms were reported during the week. Both cases had been handled by the local veterinarian and all the young animals on these farms had been vaccinated.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending October 14, the maximum temperature was 90; minimum temperature, 65; greatest daily range, 23. Showers occurred on three days, the total precipitation being 1.01 inches.

All fallow rotation plats and general fields were harrowed on Friday and Saturday, and all orchards were cultivated.

Belle Fourche.

During the week ending October 14, the maximum temperature was 74; minimum temperature, 29; precipitation, .03 inch.

Most of the beets in the irrigated rotations were plowed out, topped and piled. Yields of the beets will be given in a later report. Husking corn in the dry land rotations was continued.

A small house, 10 x 12 feet, is being erected, to be used as a laboratory for the drying of soil and other samples.

A four-horse team has been at work on the new breaking in the horse pasture, and a team has been plowing in field A.

Results obtained from pasturing spring pigs on corn rotations 65 and 69 are as follows:

Rotation 65.

Dates	No. of days	No. of pigs	Weights		Gains.			Return per acre.
			Initial	Final	Total	% daily	per day per pig	
9/16-9/26	10	3	313.0	366.5	53.5	1.57	1.78	$ 14.98
9/26-10/6	10	3	366.5	418.0	51.5	1.34	1.72	14.42
10/6-10/10	4	3	418.0	442.5	24.5	1.44	2.04	6.86
Totals	24		313.0	442.5	129.5		1.80	$ 36.26

Rotation 69, Plat A-II-29

9/16-9/26	10	3	299.0	340.5	41.5	1.33	1.38	$ 11.63
9/26-10/6	10	3	340.5	377.5	37.0	1.03	1.23	10.36
10/6-10/10	4	2	273.5	282.5	9.0	.80	1.01	2.53
Totals	24		299.0	386.5	87.5		1.21	$ 24.51

Rotation 69, Plat A-II-34

9/16-9/26	10	3	335.0	388.5	53.5	1.49	1.79	$ 14.98
9/26-10/6	10	3	388.5	435.5	47.0	1.19	1.57	13.16
10/6-10/13	7	3	435.5	475.5	40.0	1.29	1.90	11.20
Totals	27		335.5	475.5	140.5		1.94	$ 39.34

The total gain on both plats of corn in rotation 69 is 228 pounds, or a return of $31.92 per acre for this rotation, calculated on the basis of pork at 7 cents per pound.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Scottsbluff.

During the week ending October 21, the harvest of potatoes was completed. The yields ran fairly high, but the tubers were very rough and considerable scab was found among them, although the tubers were treated before planting.

On October 18, one day after the potato harvest was completed, about 6 inches of snow fell. This remained on the ground until the end of the week. The weather is now moderating and it is hoped that farm work will be resumed at an early date. During the stormy weather some of the sheep racks were remodeled.

The following yields were secured from the potato varieties:

Variety	No. of rows	Acre yield, bushels.		
		Large	Small	Total
SxK-86	2	196	10	206
SxK-87	2	225	16	241
15335	2	220	6	236
15411	2	115	13	128
8114	2	310	3	313
2616	2	65	-	-
3337	2	166	26	176
7322	2	162	34	196
7605	1	135	30	165
2892	1	203	41	244
3339	1	180	13	193
Factor	1	166	16	182
Pearls	2	148	2.5	150
Pearls #37	2	189	10	199
Pearls #40	2	180	15	195
Eureka	2	350	6.6	356.6
Eureka #53	2	217	3.3	220
W. Ohio	2	225	5.8	230
W. Ohio #14	2	180	10	190
W. Ohio # 7	2	229	8.3	237
Ohio Runout	2	238	5	243
Triumph	2	250	4.1	254
Irish Cobbler	2	383	11	394
Irish Cobbler #62	2	217	5	222
Irish Cobbler #61	2	208	5.8	213
Irish Cobbler #57	2	222	3.3	225
Russett	1	198	3.3	201
Albina	3	361	5	366

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma.

During the week ending October 14, the maximum temperature was 84; minimum temperature, 41; greatest daily range, 42. Fifteen acres were irrigated.

Alfalfa for hay was harvested from C-23 and 27. Three varieties of sorghum were harvested from C-26. Cowpeas on plats A12-2 and D-3 to 5, grown for green manure, were plowed under. A15-1 and ditch end of fig orchard were plowed. Sorghum plats C-36 to 38, alfalfa row plantings on C-27, and 2 acres of miscellaneous plantings were cultivated. Bermuda grass was hoed from A15-4, alfalfa nursery, and C-18, pomegranates. A-18 to 21, date orchard, and E-1, fallow, were disked.

A woven wire fence is being built around the artichokes on B-18. Later a drove of hogs will be turned in to harvest the tubers. A number of concrete gates were set in the C ditch to replace the wooden boxes.

Mr. Vinall, who spent most of the week at this station, accompanied by Mr. Reed left Friday for Chula Vista.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

During the week ending September 30, 6 calls for assistance were received, 17 farm visits were made, and milk was tested on 2 farms.

Mr. Price, of the Extension Department of the State College, remained in the valley for a few days following the State Fair, and spent Monday in helping to start 2 silos on the Project. Another silo was built during the week.

The scarcity of dependable labor is causing considerable trouble. There is quite a large amount of building both in the city and in the country, and carpenters for silo work are scarce. This fact makes it necessary to spend more time at silo construction than would otherwise be required.

Considerable inconvenience is anticipated in handling the bulk of the apple crop, the potato crop, and the third cutting of alfalfa at the same time.

During the week ending October 7, 34 farms were visited, 24 of which were made in regard to securing live stock exhibits for the Tieton Community Fair, to be held October 20 and 21. Milk was tested for 5 farmers.

The Tieton Community Fair has been planned for during the past 4 weeks, and the committees in charge of the different departments have been busy during the past week in locating material and interesting farmers in making exhibits. The Tieton School is the center of the activities and the prospects are good for a successful Fair. This will be the first community exhibition attempted on the Project, with the exception of the one planned at Cowichee last fall which was dropped on account of the early bad weather.

Potatoes are selling about $20 per ton; alfalfa hay is quoted by local buyers at $12 and $13 per ton, baled. Butter fat has advanced to 35 cents with the Cowichee factory paying 37 and 42 cents for fat in cream and whole milk respectively. Prime hogs are quoted locally at $9 per cwt. and prime steers at $5 to $5.50.

During the week ending October 14, 10 calls for assistance were received, all of which were answered by farm visits. Thirty-seven farms were visited, 17 of which were visited on one day in regard to live stock exhibits for the Tieton Community Fair. Two days were spent at silo construction, one concrete silo being extended, and a wooden silo being started.

Four calls were received in regard to deaths from and vaccination against blackleg. Two herds of 18 head were vaccinated with U. S. De-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

partment vaccine on Monday. On the same day, 2 neighboring farmers vaccinated with commercial vaccine. Deaths continued to occur in the latter herds up to and including Saturday. Although this may be expected in an exposed herd for a number of days following vaccination, there is some doubt that the last two animals which died were affected with blackleg, as examination failed to locate entirely characteristic blackleg symptoms. The herd is being carefully watched for developments.

Prices for farm products are substantially as they were last week with the exception of an advance in the price of potatoes. Several bids were reported between $22 and $24 per ton during the week, and on Saturday, one of $25.50 was received. The labor situation is growing to be more of a problem. The local high school is crowding 5½ hours of school before 1:30 p. m. and dismissing at that time.

Huntley.

During the week ending October 14, 17 farm visits were made.

Mr. C. F. Doane, of the Dairy Division, was a visitor to the Project on Friday and Saturday.

A farmer has requested assistance in locating about 20 head of Holstein heifers which he wishes to import to the Project as soon as possible.

North Platte.

During the week ending October 14, 20 requests for service were received, 23 farms were visited, 4 cholera outbreaks were found, and 418 hogs were vaccinated in 7 herds. The first cholera outbreaks south of the river this season occurred during the week in 2 large herds. In one of the herds the trouble started in a bunch of sows and showed a very virulent form.

One severe case of Necrotic enteritis was found in a herd near Minatare. The ante-mortem symptoms resembled cholera, but on post-mortem examination no cholera lesions were found. The mucous membrane of the small intestines had given place to a thick necrotic membrane that seemed about to slough off. This trouble is similar to what has been found in some other herds on the Project in the past.

During the week 3 herds were visited that were vaccinated some time ago. There were several sick hogs in the herds at the time of vaccination, but, of the 241 vaccinated, only 5 were lost.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

On Thursday a much needed rain fell, greatly improving the roads and helping fall sown crops. While the week was given over very largely to cholera work, some attention was given to selecting breeding stock and feeding rations.

Truckee-Carson.

During the week ending October 14, a trip was made by Mr. Cline to San Francisco and Humbolt County, California. In San Francisco the poultry markets were visited. There is considerable activity in the poultry market on the coast for this season of the year. Turkeys are in much demand, and commanding a price of four or five cents a pound more than the prices at this time last year. Buyers say this is due to the fact that there are no turkeys in cold storage now, and all supplies must come directly from the farm. This condition has stimulated interest in the turkey crop of this locality, because the turkeys here are especially well developed for this time of the year.

One day was spent in the Ferndale dairy district, in Humbolt County, investigating the Ferndale Cow Testing Association. This association has 2,400 cows on test. Two men are employed to do the testing. The results of this Association have been very remarkable. After seven years of herd testing in this locality, very high average tests have been developed in the herds and average annual productions of 350 to 450 pounds of fat are common. Land valuations are about five hundred dollars per acre. Most farms are operated on the tenant system, the average rental being $25 per acre per year; practically all concentrated feeds are purchased from the outside. This is a dairy section exclusively, and in spite of the excessive cost of operation the high development of the dairy herds makes dairying very profitable. The cow testing association is given much credit for the high average production of the section.

EXPORTS AND IMPORTS OF DAIRY AND MEAT PRODUCTS.

The table below, showing the exports of dairy and meat products during the last three fiscal years, has been compiled from tables published in "Monthly Summary of Foreign and Domestic Commerce of the United States" for June, 1916, issued by the Department of Commerce. In this table, the quantities and values are expressed in thousands; that is, ",000" is omitted.

Exports for 12 months ending June-
(,000 omitted)

Commodity.	1914.		1915.		1916.	
	Quantity	Value	Quantity	Value	Quantity	Value
Dairy Products, pounds..						
Butter.....	3,693	$ 877	9,850	$ 2,392	13,503	$ 3,592
Cheese.....	2,427	414	55,362	8,463	44,394	7,430
Condensed milk.....	16,209	1,341	37,235	3,066	155,734	12,404
Total dairy products...		$ 2,632		$ 13,922		$ 23,426
Beef Products, pounds...	148,987	$ 14,962	383,533	$ 48,432	444,053	$ 56,759
Mutton, pounds.....	4,685	$ 523	3,877	$ 448	5,552	$ 696
Hog Products, pounds....	980,216	$118,557	1,176,171	$144,015	1,512,375	$192,342
Total dairy and meat Products (approx.)....		$146,000		$220,000		$291,000

The dairy products included butter, cheese, and condensed milk; the beef products included fresh, canned and pickled beef, oleo oil and oleomargarine; and the hog products included bacon, hams and shoulders, lard, lard compounds, and fresh, canned and pickled pork. Very large increases are shown in the exports of these three classes of products, but the increase in mutton exports was comparatively small. The most striking increases were in dairy products, particularly condensed milk, of which the exports advanced from 16 million

Exports and Imports of Dairy and Meat Products (continued).

pounds in 1914 to nearly 156 million pounds in 1916; and cheese, of which the exports were 44 million pounds in 1916 as compared with less than 2½ million pounds during the fiscal year preceding the outbreak of the war.

A relative statement of exports of meat and dairy products in the fiscal years of 1914 and 1916 is given in the following table, in which the quantities and values of the 1914 exports are stated as 100:

Relative Statement of Exports for Years Ending June.

Commodity.	Quantity.		Value.	
	1914	1916	1914	1916
Butter.....	100	380	100	413
Cheese.....	100	1845	100	1836
Condensed milk.....	100	961	100	930
All beef products.....	100	300	100	380
All hog products.....	100	154	100	162
Mutton.....	100	120	100	133

The table shows that the exports in 1916 ranged from 1.2 times those of 1914, for mutton, to 18.45 times those of 1914, for cheese. The values of the 1916 exports ranged from 1.33 times that of 1914, for mutton, to 18.36 times that of 1914, for cheese. Slight decreases are indicated in the unit values of cheese and condensed milk. These decreases may be due in part to disproportionately large shipments during the early part of the fiscal year 1916, when domestic prices were lower than at the end of that fiscal year, or to discrepancies in the exporters' declarations of prices at points of export.

During the three fiscal years ending June 30, 1916, the imports of meat products fluctuated, their value having been about 26 million dollars in the year ending June 30, 1914, 28 million dollars in 1915, and 17 million dollars in 1916. On the other hand, the imports of cheese, and to a relatively greater extent, butter, decreased materially, as is shown in the table on the following page, in which quantities and values are shown in thousands, (",000"omitted).

Exports and Imports of Dairy and Meat Products (continued).

Imports for the Year Ending June 30.
(",000" omitted)

Commodity.	1914. Quantity	1914. Value	1915. Quantity	1915. Value	1916. Quantity	1916. Value
All meat products,(approx)		$26,000		$28,000		$17,000
Butter, pounds.....	7,842	1,753	3,828	977	713	212
Cheese, pounds.....	63,784	11,010	50,138	9,370	30,087	7,058
Total, butter & cheese..		$12,763		$10,347		$ 7,270
Total, dairy and meat products.....		$38,760		$43,046		$24,757

As shown in the table, the imports of butter fell from nearly 8 million pounds in 1914 to less than 3/4 million pounds in 1916, while the cheese imports decreased from 64 million pounds to 30 million pounds. The imports of meat have been very small during the 3-year period, when compared with the exports.

There have been comparatively small imports of any dairy products except butter and cheese, and the statistics of these small imports are not readily comparable. The quantitative relationships of imports and exports of butter and cheese during the past three fiscal years are shown below, where "100" represents the imports in each instance:

	Year Ending June. 1914	1915	1916
Butter, lbs.,.....			
Imports.....	100	100	100
Exports.....	47	257	1860
Cheese, lbs.,.....			
Imports.....	100	100	100
Exports.....	4	114	147

Exports and Imports of Dairy and Meat Products (continued).

This table shows that in 1914 we imported about twice as much butter and 25 times as much cheese as we exported. But during the past two years the exports of both butter and cheese have exceeded the imports. In 1915, we exported 257 pounds of butter and 114 pounds of cheese for each 100 pounds imported, while the corresponding figures for 1916 were 1860 for butter and 147 for cheese, the importation of butter having practically ceased.

The foregoing data regarding exports and imports of meat and dairy products during the past three fiscal years may be summarized briefly as follows:

1.-- The imports of meat products have been relatively small throughout the period, ranging in value from 17 million dollars (1916) to 28 million dollars (1915).

2.-- The exports of meat products have increased from 143 million dollars in 1914 to 268 million dollars in 1916, or about 87 per cent.

3.-- The imports of dairy products have been confined practically to butter and cheese. Butter imports have fallen from 8 million pounds in 1914, to less than 3/4 million pounds in 1916. Cheese imports have decreased from 64 million pounds in 1914, to 30 million pounds in 1916. On the basis of value, the imports of these two dairy products have fallen from 12-3/4 million dollars to 7-1/4 million dollars, or about 43 per cent. during the three years.

4.-- On the other hand, the exports of dairy products (butter, cheese and condensed milk) have greatly increased, their value having risen from 2.6 million dollars in 1914 to 23.4 million dollars in 1916, or 800 per cent.

5.-- Considering both meat and dairy products, it is seen that we have been exporting increasing quantities and importing decreasing quantities. The effects are reflected in the present prices for these products.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending October 21, the maximum temperature was 87; minimum temperature, 38; greatest daily range, 48. Rain fell on the first three days of the week, the total precipitation being 3.38 inches. The larger part of the rain fell on Monday, 2.10 inches being recorded on Tuesday morning. The rain wet the soil very thoroughly and put it in excellent condition for the planting of fall crops.

Due to the wet condition of the soil, no field work was done until Friday. Weeds were cut in the road fronting the farm and on a few unplowed field plats. The final picking of cotton on the rotation plats was completed. The rest of the time was utilized in doing miscellaneous work, such as repairing machinery, buildings, and in work on the grounds.

Mr. Scofield arrived on Friday, to spend several days at the farm.

Yuma.

During the week ending October 21, the maximum temperature was 94; minimum temperature, 40; greatest daily range, 45. Nineteen acres were irrigated.

Sufficient clearing is being done on the D and E series to permit an extension of the D lateral to the south road. Leveling is being continued on the C series. Concrete posts were put in along the east line to replace decayed willow posts.

Cowpeas on D-1 and 2 were turned under. Fallow plats B-9 and 10 and D-14 were disked; also A-25, dates. Sorghum stalks were removed from D-27. A-10-5 was manured and disked.

The following plats were harvested: B-5, cowpeas, C-25, sorghum, and Indian millet on D-13. A-10-3 is being planted to truck.

Messrs. Lyman Briggs, O. F. Cook, P. V. Cardon, G. N. Collins, W. T. Swingle, T. H. Kearney, and H. T. Loomis were visitors during the week.

Truckee-Carson.

During the week ending October 14, the maximum temperature was 68; minimum temperature, 33; precipitation, .27 inch.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Truckee-Carson (continued).

A light rain fell on October 11, bringing the total precipitation for the month up to 1.12 inches. The rain has damaged a considerable portion of the third crop of alfalfa.

A fence around the hog pasture in field E was torn down and the land prepared for plowing.

A trip was made to the ranch of Mr. Dietz, at Northam, to inspect the potato varieties planted there. The potatoes were in excellent condition and give promise of a heavy yield.

Mr. Headley left for Washington on October 13, for the purpose of making his annual report.

During the week ending October 21, the maximum temperature was 76; minimum temperature, 24.

The remainder of the third cutting of alfalfa was hauled and stacked. Owing to the continued rains, the hay is of very poor quality.

Most of the ditch banks were mowed, and the weeds and sweet clover hauled to the barnyard to be tramped into the manure.

Belle Fourche.

During the week ending October 21, the maximum temperature was 81; minimum temperature, 21; precipitation, .10 inch.

Topping and picking beets in the irrigated rotations was completed with the exception of one plat. The yields will be given in a later report.

Threshing alfalfa seed was begun, but snow, which fell on the night of the 17th, prevented completion.

Plowing with two four-horse teams was continued in field A and the horse pasture.

Husking corn in field P, fall irrigation experiment, was commenced.

The greater part of the week was put in by the men in caring for horses, cleaning up, working on the buildings and drainage system, mulching trees in the forestry, and fencing.

Umatilla.

During the week ending October 21, the maximum temperature was 80; minimum temperature, 20.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Umatilla (continued).

Two days were spent in assisting with the Fourth Annual Hog and Dairy Show, at Hermiston.

Although stock came in to very little extent from other farms than those located on the Umatilla Project, the showing was much better than in either previous year. There was a substantial increase in most all classes of hogs and dairy animals, to which the show is confined. The principal improvement, however, was in quality of stock exhibited. There has been a very substantial and rapid improvement in quality of stock in the vicinity. This was readily apparent to those who have been in attendance at these shows.

A number of good cows were shown that were sired by the pure bred bull kept at the Experiment Station for a period of two years early in the development of the dairy industry on the Project. Some nice calves were also shown that were sired by the three Breeders' Association bulls that were purchased last year. These bulls are the best to be had and are laying a foundation for an excellent grade of dairy stock in this vicinity. Practically the entire district is breeding Jerseys, although a few Holsteins are bred, and were shown at the recent show.

The provision that was made for entering fruit and agricultural exhibits this year resulted in several excellent entries and some close competition in plate exhibits, and one and five box exhibits of apples. Some good corn and farm displays were entered.

4 November, 1916.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

During the week ending October 21, 16 farms were visited, 6 calls for assistance were answered by farm visits, and milk was tested with 4 farmers.

Two and a quarter days were spent at the Tietón Community Fair. This fair was the first attempt to hold a community fair which has materialized. The first day was given to the agricultural and horticultural exhibits and an afternoon program. The second day was spent with the livestock exhibits and with the boys' corn club. The advertizing expenses were borne by merchants whose business cards appeared on the posters. First, second and third ribbon prizes were given in all classes of exhibits. Championship and sweepstake ribbons were also given, but no cash prizes were given except for the boys' corn exhibits.

The agricultural, horticultural and home economics exhibits each occupied a large room; two of these were in the school house and one in the church. Livestock exhibits were provided for out-of-doors. Livestock was on exhibition on Saturday only, and hence had to be fed but once on the grounds. The livestock exhibits were fair as to quality and especially good as to quantity in consideration of the first exhibition. There were 20 sheep, 15 dairy cattle, 28 hogs, and 27 horses on exhibition.

Prices for farm produce were especially good during the week. Potatoes sold as high as $35 per ton the latter part of the week, and hay reached $13.50 per ton, baled, on board cars. Prime hogs were quoted at $9 per cwt., and butter fat was the same as the preceding week. In fact, this is an especially good fall for cash crops and for dairy and hog prices. The local beef cattle market is not so good and a number of owners are considering a cooperative shipment to Seattle or Portland. In this connection market letters are secured from both markets for the farmers interested.

Wheat is selling at from $1.25 to $1.27½ per bushel, and is moving to market rapidly. But little other grain has moved as yet and no price for the season's crop can be given.

North Platte.

During the week ending October 21, 17 requests for service

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

were received, 10 farm visits were made, 4 cholera outbreaks were found, and 380 hogs vaccinated in 4 herds. While 4 outbreaks of cholera occurred during the week, the general outlook is considerably improved over what it has been during the last two months. It is believed that the situation will continue to improve as the weather grows colder.

The shoats in the Emery feeding test were weighed up during the week, closing the test. On account of the large number of hog cholera outbreaks which have occurred during the past two months, it has been possible to give but little attention to other work.

The first heavy snow of the season fell on Wednesday, stopping work in the beet fields for two days.

On Saturday, another car load of shoats was shipped to the State Serum Plant at Lincoln. There were 175 head in the car with an average weight of 81 pounds. The price paid was 10¢ per pound.

Uncompahgre.

Monday, of the week ending October 21, was spent assisting farmers in the selection of dairy cattle from a farm at Ridgway, Colo. There were 10 heifers and cows selected, all of the Holstein breed. The animals were found to be of very fair quality. The owner, having purchased a bull in 1910 which carried blood from the Pontiacs, Farmstead, Aaggies, and DeKols, has bred a very good herd. The animals offered for sale have been developed from common red cows.

Wednesday was spent at a sale where assistance was given in the selection of a carload of yearling steers to be fed on silage and alfalfa hay. The average weight of the steers was 702 pounds. They were purchased at $46 a head, or about 6½ cents a pound. Fourteen heifers of the same age were sold at $44.

Two reports were received during the week from farmers who had lost calves. Upon investigation it was found that the loss was due to abortion, probably contagious abortion. In one case there had been a loss of 6 calves, and in the other, 2. There seems to be a tendency for the range men to allow their bulls free run and the trouble has been traced to the bringing in of animals from the range. The farmers were given advice on the treatment of the trouble, and were given a circular letter on the subject of disinfection. This is the first case that has been reported on the Project. There has been some trouble among the range herds, and it can all be traced to this source.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

The cheese factory at Delta was visited, and the plan of operation was looked into. The Delta business men started the plan of having a cheese factory, purchased a building, and induced a cheese factory man from Hotchkiss to operate the factory as a private institution. He was assured the support of 300 cows, a small part of them being on the Project. However, he has found that there are only a very few cows to furnish the milk. He is paying only 36 cents for butterfat and expects the farmers to deliver the milk. They are receiving 34 cents for cream at the Montrose Creamery at present and this brings them more money.

There has been a shortage of cream throughout the State, and the buyers from the large creameries are here offering from 3 to 4 cents more for butterfat than can be paid locally. This is affecting the cream supply at the local creamery.

Minidoka.

During the week ending October 14, Mr. Rinehart made a trip to the Twin Falls Tract with 5 farmers, and assistance was given in the selection of 8 registered Holstein cows and 2 Holstein bull calves. The stock secured was all good as to type and pedigree. Prices paid for the cows ranged from $190 to $250 per head. Considering the type, the pedigree and the high A. R. O. records made by the cows purchased, the prices were low, from $50 to $100 less than the usual price paid for this class of cattle. Only about half of the desired number of cattle were secured on this trip.

As the weather for the past two weeks has been cold and stormy, with much rain, there have been many complaints of bloat on clover and alfalfa pasture. The trouble has been worse among the range sheep that are now being pastured in the alfalfa fields, but is also occurring among the cattle and sheep that have been on the same pastures all summer.

The rains are interfering with the putting up of the third crop of hay, some of which has been in the shock for two weeks while other fields are yet uncut. The harvesting of the beets and potatoes is also delayed. There is yet much grain to be threshed and clover seed to be hulled.

Shoshone.

During the week ending October 21, 8 farm visits were made, conferences were held with 7 other men, and 10 cows were tested in 2

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone (continued).

herds.

One of the Project farmers has sold his beet tops and alfalfa hay to a sheep owner. The sheep are to be brought onto the farm about December 1, and are to be in charge of the owner, who will pump the water needed. The beet tops were sold for $4.00 per acre, and the hay at $6.00 per ton. The farmer is also to receive 50 cents per ton for hauling the hay out into the fields. All of the hay will be fed on land which is to be put into beets next year.

A good many potatoes were grown on the Project this year, and the yields have been good, as high as 36,000 pounds per acre having been reported. As none of them were sold under $1.25 per cwt., and most of them for $1.50 per cwt., the returns are quite satisfactory.

WESTERN IRRIGATION AGRICULTURE
Field Notes.

Scottsbluff.

A snow storm occurred on Sunday and Monday of the week ending October 28. The snow remained on the ground until about Thursday.

During the first few days of the week the weather did not permit of any outside work, and all labor was confined to inside work. As soon as the weather moderated the potatoes were sorted and taken to Scottsbluff. If the weather continues fair next week, it is hoped to continue the harvesting of sugar beets.

Belle Fourche.

During the week ending October 28, the maximum temperature was 68; minimum temperature, 18; precipitation, .04 inch.

Husking corn in the irrigated rotations, field P, fall irrigation experiment, field D on the dry land, and the varieties in field O, was completed. Husking corn in field O was not quite completed, a small part remaining to be finished.

The threshing of alfalfa seed in field I was completed.

Two four-horse teams were at work the greater part of the week plowing field A and the horse pasture. A part of the force was engaged in putting a concrete floor in the soil laboratory, working on the drainage system, fencing, and cleaning up.

Clover seed from field A was threshed. In the following table a summary of the yields of clover for the season of 1916 is given. Both plats were very foul with volunteer wheat and weeds.

Yields of clover - 1 9 1 6 .

Rot. No.	Plat No.	Date of harvest	Hay, tons per acre	Date of harvest	Cleaned seed, Bus. per acre	Straw, Tons per acre
66	II-26	6/28	.80	9/12	1.0	.64
XI	-48	6/28	.52	9/12	3.17	.85
Av.			.66		2.08	.75

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Belle Fourche (continued).

The following table gives the yields of sugar beets in the irrigated rotations in 1916.

Rot. No.	Plat No.	Tons aper acre	S. Dak. State College Test.			Scottsbluff Sugar Co. Test.			Stand per acre, thous	Weight per beet, Ozs.
			% sugar	% purity	Lbs. sugar per acre	% sugar	% purity	Lbs. sugar per acre		
2	I-45	5.84	19.8	93	2150	19.5	89.1	2030	23.5	7.94
2a	III-30	6.8	20.1	94	2570	19.0	91.8	2450	24.1	9.03
18	I-25	5.82	18.6	91	1970	18.4	88.0	1880	20.9	8.91
20	I-27	9.72	18.4	92	3290	18.0	88.8	3110	22.6	13.76
21	I-29	12.06	20.3	96	4700	16.9	86.1	3515	23.9	16.14
22	I-31	8.06	19.6	93	2940	18.5	89.2	2660	22.0	11.72
23	I-33	9.60	19.4	90	3350	18.8	89.0	3210	22.3	8.62
30	I-17	4.64	19.2	92	1640	17.9	91.3	1530	20.8	7.20
31	I-20	8.22	20.0	97	3190	19.8	90.6	2950	22.4	11.74
32	III-11	3.96	18.2	96	1385	19.0	90.8	1365	19.1	6.63
*40	I-2	8.82	20.7	89	3250	19.8	89.1	3150	20.7	13.67
42	I-6	4.24	19.4	95	1560	20.9	91.7	1625	21.4	6.34
60	I-13	7.20	20.1	96	2780	19.2	90.5	2500	19.4	11.87
61	II-17	10.42	20.1	92	3850	19.7	91.0	3735	23.7	14.05
62	II-11	4.85	20.0	93	1805	19.8	90.7	1740	20.3	7.65
66	II-27	2.93	17.1	90	900	16.7	86.4	845	15.5	6.05
71	III-34	5.80	21.7	91	2290	20.2	89.9	2105	22.9	8.10
Max.		12.06	21.7	97	4700	20.9	91.8	3735	24.1	16.14
Min.		2.93	17.1	89	900	16.7	86.1	845	15.5	6.63
Av.		7.00	19.57	93	2560	18.8	89.6	2375	21.5	9.97

* One-tenth acre.

San Antonio.

During the week ending October 28, cool, clear weather prevailed. The maximum temperature was 88; minimum temperature, 43; greatest daily range, 45.

Field work was carried on throughout the week. All fallow rotation plats and other fallow fields were harrowed. Orchards were

San Antonio (continued).

cultivated. Clearing fields of cotton stalks was started and the following rotation plats were plowed: A4-11 and 15, and A5-7, 11 and 15. Plowing of field D3 was started. Several miscellaneous fields and rotation plats were weeded. Two acres of winter oats were planted on field C5 to be used in the steer pasturing experiment.

Dr. K. F. Kellerman visited the farm on the 22nd, and he and Mr. Scofield left for Arizona and points in California on the 23rd.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson.

The week ending October 28 was devoted almost entirely to the marketing of hogs and turkeys. One car load of 94 hogs was shipped on Saturday, consigned to the Western Meat Co., of San Francisco. Nine farmers took part in the shipment. The following prices were quoted by the Western Meat Co. for this shipment: hogs, weighing 150 to 250, 8-3/4¢; if 75 per cent. of this size hogs went over 170 pounds 9¢ would be paid; hogs weighing 100 to 150, 8½ ¢; hogs weighing over 250, 8-1/4 ¢.

Considerable interest is being shown in cooperative marketing. Space has already been reserved for 240 hogs for shipment the middle of November. So far one man has accompanied all the shipments to San Francisco. He has consigned hogs each time. He is allowed $4.00 per day and return transportation.

The present price of grain, $40.00 per ton, has been a hindrance to the proper finishing of hogs for market. Many owners of hogs feel that a loss is sustained when such high priced feed is fed when hogs are at the present market price. In order that some definite information might be had along this line feeding tests are being conducted on different lots of hogs that are being finished for market. The following are reports of two tests recently made:-

One lot of hogs on October 5 weighed 1707 pounds. These same hogs on October 24 weighed 2218 pounds, showing a net gain of 511 pounds in 19 days, or 1.67 pounds per day per hog. The total amount of grain consumed was 2172 pounds. The grain required for each pound of gain was 4.25 pounds. The cost of grain at 2¢ per pound made the cost of each pound of gain 8½ ¢. The finished hogs (2218 pounds) were worth 8½ ¢ on the market. The hogs before feeding (1707 pounds) were worth 8¢ on the market. Thus, the increase in the value of the hogs amounted to $51.97. The total cost of grain consumed for the 19 days was $43.45, leaving a margin of $8.52 above the cost of feed. Rolled barley was used in this experiment.

The second feeding test included 14 hogs. On October 6 they weighed 2003 pounds. On October 26, after 20 days of full feeding on ground wheat, they weighed 2684 pounds, showing a net gain of 681 pounds, or 2.44 pounds per day per hog. The total amount of grain consumed was 2728 pounds. The cost in grain per pound of gain was 4 pounds. The value of grain in this test was $40.00 per ton. The cost of 1 pound of gain therefore was 8¢. The finished hogs (2684 pounds) were worth 8-3/4 ¢ per pound. The hogs before feeding (2003 pounds) were worth not more than 7-3/4 ¢ on the market because of their poor condition. Thus, the increase in the value of the hogs during the 20 days' feeding amounted to $79.62. The

Truckee-Carson (continued).

value of the grain consumed during this time was $54.56, leaving a margin above feed cost of $25.06.

From the two tests mentioned it may be seen that these farmers were able to put their hogs on the market in a finished condition with a small margin above cost of feed for finishing. Many hog growers in this section are of the opinion that there are little or no net returns in growing hogs for market with the prices of grain that have prevailed in the last 2 years in this section. However, the 2 tests above mentioned indicate that the hogs now on hand had better be finished for market than to be disposed of at 4¢ or 5¢ per pound as stock hogs.

There has been much activity on the part of the turkey buyers in this locality during the past week. One San Francisco firm established a local cash market and dressed turkeys here. The prices paid were 20¢ to 22¢ alive. Seven hundred and fifty turkeys were purchased by this firm. Another San Francisco firm established a local cash market, but shipped the turkeys out alive. The latter firm also contracted for 4,000 turkeys for Thanksgiving delivered at prices ranging up to 25 ¢ for dressed turkeys f. o. b. Fallon. Two other cash buyers were looking over the territory with the intention of returning for the Thanksgiving season. The excellent condition of the turkeys here for this season of the year has attracted buyers for their early supply.

Uncompahgre.

The first part of the week ending October 28 was spent with the manager and operator of the cheese factory at Delta in an attempt to interest more of the farmers near Delta in the matter of supplying their milk to the factory. The factory is being operated every other day with apparently good results. On account of the farmers being very busy with the harvesting of the onion and potato crop and the difficulty of obtaining help, it was very difficult to interest them in bringing their milk. It will be necessary to haul the milk considerable distances in order to get enough to make the plant profitable. The operator has agreed to pay one-third of the hauling expense. The cheese maker is getting a yield of 12 pounds of cheese per cwt. of milk, and is now paying 37 ¢ for butterfat. His cheese is nearly all sold green at a price of 20 ¢ wholesale.

On Tuesday there was a snow fall of 4 inches on the upper end of the Project. This was the first snow of the fall.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

A milk testing demonstration was conducted at the Uncompahgre school one day during the week. A milk testing club is being formed in which there will be 9 members. In the evening of the same day an illustrated talk was given to a gathering of people at one of the rural school houses. There were 150 people present and a great deal of interest was shown in the hog house pictures.

Wheat has advanced to $2\frac{1}{2}$ ¢ during the week. Potatoes are being sold in small lots at $2.00 per cwt. Hogs are worth $9.60 on the Project. Onions are bringing 2.25 per cwt.

Minidoka.

With the exception of a snow storm on Wednesday forenoon, the weather of the week ending October 21 was favorable for the harvesting of the beets and potatoes, putting up the third crop of hay, threshing grain and hulling clover. The farmers are very busy and are employing much outside labor.

For the first time in the history of the Project the farmers are beginning to discriminate against poor quality in live stock. Inferior cows that formerly sold for prices ranging from $75 to $110 are now going at beef prices (from $35 to $70) while the best registered stock are bringing from $125 to $250 according to the type and pedigree. As the greatest problem on the Minidoka is to improve the quality of the live stock now owned, this change is very desirable. Formerly there was a difference of only from $15 to $25 between the best and poorest types of cows.

The Acequia Cheese Factory is running strong with 2400 pounds of milk a day locally and 800 pounds extra sent in from Jackson every other day. The machinery is now being installed in the Paul factory. The price of cheese is 18 and 19 cents wholesale with the demand greater than the supply.

Hay has advanced to $10 a ton in the stack. Butter fat is varying from 36 to 37 cents per pound (with 1 cent deducted for each pound of cream). Potatoes advanced in price each day, going from $1.50 the first part of the week to $2.00 per cwt. on Saturday. There are but very few hogs being finished for market at this time, the most of them still being in the pasture fields. Market hogs are bringing $7.75. Unless prices advance there will be but very few finished as the majority of the farmers refuse to feed the grain at the present prices, which are $2.40 per cwt. for wheat and $1.75 for barley.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

The Paul Cooperative Cheese Factory opened on Tuesday of the week ending October 28. The supply of milk is very small, from 500 to 700 pounds a day. This is only about one-fourth enough to enable the factory to run at a profit. Although the organization was completed under favorable circumstances, the management of the construction and opening has been unfortunate. The officers were unable to agree upon the plan of building and the conservative members resigned. The plans worked out for a cheap, practical building were elaborated into a very fine brick building, the complete cost of which is not yet known. Because of the disagreement and the change of plans, the opening was delayed until a time of year when the price of butter fat is as great at the creameries as at the cheese factories. The interest and good will of many of the stockholders and other expected patrons was not held. Under the circumstances it seems best to have the officers make an effort to secure sufficient product to enable the factory to run at a profit. If this cannot be done it will be advocated that the factory close down until next spring. The main difficulty has been the old trouble of a booster town with the business men taking too active part in a farmers' cooperative concern.

The car shortage is becoming serious. Hay, grain, and potatoes are piled up or stored away awaiting shipment. Eleven car loads of steers from the Raft River range have been held at Burley since Thursday noon awaiting cars. Labor, too, is very scarce, the surplus from the towns, as well as much outside labor, being insufficient to supply the demand.

Wheat advanced to $2.50 per cwt. during the week. Potatoes advanced from $2.00 per cwt. on Monday to $2.25 on Thursday, and dropped to $1.85 on Friday. Hay buyers were unable to find hay at $10 a ton in the stack. 9 cents a pound is being offered for the best range lambs in the alfalfa, grain and beet fields. Good feeder steers can be bought for 6 cents and feeder hogs at almost the buyer's own price. Butter fat at the receiving stations is 37 cents with 1 cent reduction for each pound of cream. At the present time the price at the Acequia Factory is about the same (between 33 and 35 cents a pound for fat), while the Paul Factory could not pay over 20 cents.

North Platte.

During the week ending October 28, no additional outbreaks of hog cholera were found, which indicates that the cholera situation

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

is materially improved. This is the first week since early in August that there has not been at least one outbreak. However, it was necessary to finish vaccinating a herd of 24 that was not finished last week.

The Nebraska Live Stock Sanitary Board has recently voted to allow the use of virus in this locality in those districts where there has been so much cholera during the past few months. This action was taken upon recommendation from this office.

Practically the entire week was spent in the office doing general office work. Nine farms were visited and 10 requests for service were received. Final weights were taken for a number of boys in the Pig Club.

Tieton.

During the week ending October 28, 19 farms were visited, 6 conferences were held at the office, milk was tested with 6 farmers and one and a quarter days were spent at silo building. One farmer was assisted in selecting 4 cows, and 4 other cows were added to a Project herd during the week.

Five farmers in the Cowichee Valley had decided to cooperate in shipping steers to the Seattle market. The day before the car was to be loaded it was decided to postpone the shipment on account of the poor condition of the market for that class of stock. The margin between well finished steers and steers from pasture has been widening until there is very poor demand for the latter. Inasmuch as the steers to be sold were recently from the range they would not sell to good advantage and it was decided to try feeding them to better condition. Portland and Seattle quotations, running about the same, are from $4.25 to $5.25 for average steers with good steers from $6.25 to $7.00.

A yield of 38 tons of silage from 1-2/3 acres has been secured by Mr. L. S. Mayer. A careful review was made of his work on this field of corn, including man and team work from the time the corn ground was plowed until the crop was in the silo, and the cost of irrigation water was included. The silage cost $2.26 per ton of which $1.42 was for harvesting the corn and filling the silo. The silage cutter was hired at 50 cents per ton, which is included in the $1.42. Other farmers have been asked to furnish data in this regard in view of the numerous inquiries as to the cost of producing silage.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone.

The following is quoted from a letter recently received at the Washington office from Mr. Dan Hansen, Superintendent of the Huntley Experiment Farm, who recently visited the Shoshone Project in the interest of the cooperative tests there with pasture mixtures and spring wheat:

"The results this year are considered very encouraging. Eleven of the seventeen pastures planted can be considered as successfully started. One or two of the pastures that were in rather bad condition earlier in the season, as a result of too early grazing, are in much better shape now, since the owners have kept their stock off during the past two months. In two cases the pastures have so far not been grazed and on one of these, on which there was a nurse crop of volunteer barley and oats, the stand of grass is very good and has made a heavy growth.

"The failures are due in most cases to the fact that the plantings were made on heavy alkali soil or on seeped land, and in a few cases to neglect.

"Several of the men who were successful this year have expressed their intention of increasing their acreage next season. It is probable that several will top-dress with manure at least a part of their pastures. Two pastures were planted this fall, so that there will be an opportunity to observe the results of fall planting. In both cases the stands secured were good.

"The Pringle Champlain wheat sent out from here has apparently given good results in most cases, and the farmers who planted this wheat are well satisfied. Yields in some instances were close to 50 bushels per acre."

Umatilla.

Alfalfa hay during the month of October sold for $10.00 in the stack. Many of those who are financially able to do so are holding their hay over until late winter or early spring so that they may take advantage of the much higher prices which are then almost certain to prevail. The present high price received for alfalfa is proving an added impetus to the development of new lands on the Project to be devoted to this crop.

History for the Project was made during the month when the first full carload shipment of apples for outside markets was made.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Umatilla (continued).

It is estimated that fall shipments will total eight carloads besides smaller lots to nearby markets. The fruit runs about 40% extra fancy, 40% fancy, and 20% C grade.

For the convenience of farmers with alfalfa and sweet clover to thresh a huller was operated at Hermiston. A number of farmers with small lots brought in seed to be threshed. Scarcity of seed combined with high prices is leading the water users to give more attention to alfalfa seed production. Winslow and Dyer are the only ones who have gone into the seed business on a scale that will give definite figures. They have 20 acres in sweet clover and report having secured 15,000 lbs. of cleaned seed from this area. At present the retail price of this seed is 20¢ per lb. The ground had a slight "sub" and was never irrigated, and so heavy was the growth that the huller could not handle it as it came from the field and it was necessary to first beat off the lighter stems and seed and separate the coarser stalks.

The influx of new settlers continued both around Hermiston and on the West Extension. This office continued to assist them in planning their reclamation work in a systematic manner. Help was given old settlers in planning grading operations and systems of irrigation for new land to be put into alfalfa. On the West Extension one method followed in getting settlers started is to make a topographic survey of the tract in question and from this map the area showing topography and proposed irrigation system and extent of grading operations. A blue print of the map with detailed instructions for the reclamation of the tract is given to the settler.

During the month 40 visits to tracts were made, and 50 requests for assistance were received from settlers.

APPOINTMENTS.

Under date of November 3, the following memorandum concerning requests for appointment was issued by the Chief Clerk of the Bureau of Plant Industry.

In order to expedite the consideration of recommendations for appointment, the Secretary has requested us to make all our recommendations as complete as possible. With this end in view, your attention is called to the necessity for furnishing the following information when asking that appointments be made:

1. Name of appointee.
2. Legal residence.
3. Designation.
4. Salary.
5. Roll.
6. Date effective.
7. Duration of appointment.
8. Whether to report in person or in writing.
9. Detailed statement of duties to be performed.
10. Qualifications of appointee for such duties.
11. Any previous connection with the Department.
12. Any other line of work engaged in and compensation therefor.
13. When a cooperative employee, whether his entire time is to be devoted to the work of the Department and the amount to be paid by cooperating agency.
14. When appointing from a civil service certificate, the standing of the appointee on the certificate, with a statement indicating the disposition of any names which appear above that of the appointee.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

San Antonio.

During the week ending November 4, the maximum temperature was 90; minimum temperature, 47; greatest daily range, 36. Clear weather prevailed throughout the week, and field work was carried on without interruption.

Cutting of all cotton stalks on the farm was completed. Stalks on field C5 were raked and burned. Plowing of field D3 was completed, and plowing of cotton stubble on field C5 was started. Weeding of field C6, from which the Johnson grass is being eradicated, was completed. Cotton stalks in the root rot experiment in the nursery were plowed out and the land double disked and harrowed preparatory to seeding to alfalfa. Soil samples were taken on the cotton plats in the rotation experiments.

Mr. G. P. Rixford visited the station on Sunday and Monday. Messrs. Cook and Smith spent Tuesday at the farm and made final observations on the cotton experiments. Mr. Scofield returned to the farm on Thursday morning and left in the evening for Washington.

Truckee-Carson.

During the week ending October 28, the maximum temperature was 76; minimum temperature, 24.

The alfalfa in field E was plowed under preparatory to releveling. Plats H 18, 19 and 20 were also plowed so that they might be releveled.

A root cellar was constructed near the garden in field A.

Mr. Curtis made a trip on the 27th and 28th to the farm of Mr. Dietz at Northam for the purpose of getting the yields of potatoes in the cooperative test. The field used was new ground, and this crop was the first grown. The yields are therefore not high, though for new ground most of them are good. The rows were 300 feet long and 3 feet apart, making each row equal 0.02 acre. In each case one row of the variety tested was weighed against a row alongside of Mr. Dietz' selected Burbanks. The Burbanks were practically a perfect stand while the other varieties did not come up so well. This was especially true of the Scotch Rose seed from Oregon. This variety yielded well to the hill but the poor stand made a low yield per acre.

The Scotch Rose and Russet varieties were of uniform shape and size, while the Burbanks were inclined to be rough and uneven. This

Truckee-Carson (continued).

was particularly true at the lower end of the row where the potatoes received a little too much water.

In the following table the weight of table or marketable potatoes includes the weight of seed potatoes selected. The seed potatoes are a little smaller than the best market potatoes but may still be classed as marketable potatoes.

Variety.	Total weight potatoes per row, Lbs.	Weight table potatoes per row, Lbs.	Weight small potatoes per row, Lbs.	Yield per acre table potatoes, Lbs.	Yield per acre table potatoes, Bus.
Scotch Rose (Oregon seed)	95	85	10	4250	70.8
Dietz Burbank	328	303	25	15150	252.0
Russet	275	230	45	11500	191.5
Dietz Burbank	288	228	60	11400	190.0
Scotch Rose (Cal. seed)	248	228	20	11400	190.0
Dietz Burbank	261	218	43	10900	182.0

During the week ending November 4, the maximum temperature was 75; minimum temperature, 23.

The field force was cut down to one man and the principal work was the harvesting and storing of cabbage crop from the garden and cleaning up the straw which was spread over tomatoes and melons to prevent freezing.

Scottsbluff.

The following report of yields of beets in the irrigated rotations were transmitted by Mr. Holden under date of November 10. The stand was very poor on account of hail and wind storms. Seven

Scottsbluff (continued).

of the plats were so badly damaged that they were reseeded on June 17. Due to the ununiform stand the effect of manure and alfalfa is not apparent.

The first table gives the yield, stand, size of beets, etc. for each plat, and the second table gives the yield, stand and preceding crops for the early seeded and also for the reseeded plats.

Yield of beets, field K, 1916.

Plat No.	Yield	Per cent stand	Size of beets	Per cent sugar	Purity	Per cent Beets	Per cent Tops
K- I-13-23	9.39*	53	1.51	16.4	86.8	58	42
-17-21	6.36*	70	.57	16.2	86.0	56	44
II- 4-31	15.07	50	2.21	16.2	84.6	73	27
-10-61	11.90	37	2.24	16.0	83.7	66	34
-13-40	10.42*	69	1.71	16.4	87.7	71	29
-17-20	5.78*	75	.91	17.4	86.5	67	33
-18- 2	4.93*	71	.80	17.0	87.3	59	41
III- 2-18	9.98	41	2.08	18.6	88.4	78	22
- 4-30	9.76	36	2.48	17.7	88.2	76	24
-10-60	7.53	21	2.51	15.7	83.4	71	29
-13-42	7.26*	57	1.41	15.5	85.7	62	38
-17-22	7.33*	74	1.04	17.0	84.6	68	32
IV- 4-32	8.80	34	1.98	17.2	88.1	76	24
-10-62	6.79	22	2.76	16.3	86.1	71	29

* Reseeded on June 17.

Yield of beets per acre, stand, and preceding crops.

EARLY SEEDING.

Yield	% Stand	Preceding crops. 1915.	1914.	1913.	1912.
15.07	50	Manure-oats	Potatoes	Beets-manure	Oats
11.90	37	do	do	Alfalfa	Alfalfa
9.98	41	Wheat	Beets	Wheat	Beets
9.76	36	Oats	Potatoes	Beets	Oats
8.80	34	do	Corn	do	do
7.52	21	do	Potatoes	Alfalfa	Alfalfa
6.79	22	do	Corn	do	do

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Scottsbluff (continued).

Yield of beets per acre, stand, and preceding crops.

RESEEDING.					
	%	Preceding crops.			
Yield	Stand	1915.	1914.	1913.	1912.
10.42	69	Potatoes	Alfalfa	Alfalfa	Beets
9.39	59	Manure-oats	Beets-manure	Oats	Beets-manure
7.33	74	Oats	Beets	Oats	Beets
7.26	57	Oats	Alfalfa	Alfalfa	Beets
6.36	70	Potatoes-manure	Beets	Potatoes-manure	Beets
5.78	75	Potatoes	Beets	Potatoes	Beets
4.93	71	Beets	Beets	Beets	Beets

Belle Fourche.

During the week ending November 4, the maximum temperature was 70; minimum temperature, 20.

Husking corn in field O was completed.

Corn and stover from the dry land and irrigated rotations and fall irrigation experiment in field P were hauled in during the week.

Some plowing with a four-horse team was done in fields A and O.

The pond was drained during the week. The weeds and refuse will be scraped out and burned and fresh water run in so that a clean supply of ice may be had for next year.

Some of the men were employed in fencing, cleaning grain, grinding feed, and cleaning up around the farm during the latter part of the week.

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DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Boise.

The following notes are taken from Mr. Ireland's report for the month of October:

"A number of bunches of range cattle have been coming into the valley for winter feeding. On two bunches records will be kept of feed and gains. Valley cattle that have been on the range are nearly all back and are in better condition that many expected them to be. Satisfaction with the results seems to be general except that there has been considerable loss, most of which seems to be attributed to the herders. Men who have been approached on the subject seem generally to favor the idea of a cooperative grazing association and an effort will be made to effect such an organization.

"Blackleg has been more than usually prevalent among cattle this fall. Vaccination is being more or less generally practiced but in many cases there are losses before the stock owners decide to vaccinate. This disease has acted contrary to rule in that there have been a number of cases among nearly mature stock. Three- and four-year-old cows have died from it."

Uncompahgre.

During the week ending November 4, 6 farm visits were made and 6 calls for service and information were received.

The latter part of the week was spent at the conference of field men connected with the Western Dairy Division, at Salt Lake City.

Potatoes have taken a sudden drop in price. There is a shortage of cars so that none of the crop can be moved at present. The top price at the first of the week was $2.15 per cwt. and the closing price, $1.75. Wheat prices are around $2.50 per cwt.

Tieton.

During the week ending November 4, 25 farm visits were made, and 10 conferences were held with farmers at the office.

Eight farmers were found to be interested in a cooperative shipment of hogs to either the Portland or Seattle market. Six of these

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

collectively had a carload of 98 hogs ready for immediate shipment. On Wednesday morning telegraphic reports from the Portland and Seattle markets reported sales at $9.40 and $9.75 to $9.85 per cwt. respectively. The local buyers had been receiving hogs in similar condition, i. e., grain fed and weighing 180 to 200 pounds, for $8.50 per cwt., although they advertised a $9 per cwt. price for tops. They made a bid of $9 per cwt. for the carload after arrangements had been made to ship to Seattle. The load was sold to the local buyers at their bid.

Conferences with five of the local banks resulted in arrangements by which two or more farmers may cooperate to secure money with which to buy pure bred dairy bulls. The terms are that the money is to be repaid in two portions, a half of the loan at the end of one year and the remainder at the end of the second year, the notes to draw 6 per cent. interest. Messrs. Alexander, Lennington and Wilson are now looking for a satisfactory bull which they plan to buy in the above manner.

Fourteen farmers were visited in regard to a cooperative cheese factory. There is a fair prospect of locating sufficient cows to justify an attempt to organize a cooperative factory in the Wide Hollow section, probably at Harwood. Harwood is the logical center of the section and is at the end of the electric line into that part of the Project.

Boise.

Several calls for black-leg vaccine and for assistance in vaccinating cattle were received during the week ending November 11. Ninety-five head have been treated in 6 herds in addition to vaccine which has been distributed.

The Boise Valley has lost another, and one of its most prominent, dairymen. The herd of registered Holstein-Friesian cattle belonging to J. S. Hulbert, of Nampa, was sold this week to the Idaho Industrial Institute, a private institution located at Weiser, Idaho. The price paid is not known.

The Hulbert herd is one of the best in the State. Nearly all of the mature stock and a number of the younger cows hold official, seven-day records, and several of them have semi-official year-records. The herd has been in the Boise Valley cow-testing association and contains the highest two cows for the first six months. One three-year-old cow produced 420 pounds of butter fat in 6 months.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka.

Three days of the week ending November 4 were spent in conference with the members of the Western Office of the Dairy Division, at Salt Lake City.

Among the western field men the double system of stabling with the cows confined only at milking time is by far the most popular, 2 men maintaining that the production of any herd kept in this manner is always greater than if kept in any other way. As this could not be definitely proved, it was decided best to give the prospective builder a choice of plans without advocating any one exclusively.

A review of the contagious abortion situation by Dr. Murray, of the Bureau of Animal Industry, contained much that was revolutionary to the theories of the field men. While all is more or less theory, the main theme of the talk was to disprove theories of the past. As the abortion bacteria are non-motile, it is possible that they enter the body only through the alimentary tract and possibly by the bull. It is probable that too much emphasis has been placed upon the bull as an agent in the spread of the disease. No relief of the situation was suggested as the material offered by Dr. Murray was somewhat discouraging, upsetting most of that which had been taught to and accepted by the field men as proven facts. It is evident that the problem is greater than any have anticipated and the working out of its eradication is more difficult than had been supposed. Dr. Murray expressed his opinion that the establishment of immunity, probably by vaccination, would be the final solution. As all serums are yet in the experimental stage it cannot be stated whether or not the right vaccine is being used.

The new features brought out in the silo discussion were the questioning of the necessity of tramping when filling and the value of crops other than corn in the silo; wheat in the dough stage and a mixture of bald barley and field peas were reported favorably. As usual, reports of favorable results with plants usually considered worthless for feed were made. Naturally, these reports were taken conservatively by the field men, for it was remembered that these ideas should not be spread or advocated until thoroughly proved. A peculiar thing is that silo enthusiasts sometimes lose sight of the fact that a silo merely preserves a green feed in practically its natural state without adding anything to the nu-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

trients of the plant itself. Undoubtedly credit that is due to the succulence of the silage is often given to the plant. From Montana came a report of the successful use of sunflowers as a silage plant.

The discussion tended to prove that there is as yet but little known in regard to correct feeding standards, variety and succulence apparently having much more effect in raising production than correct balancing.

The conference was carefully planned and there is no doubt but what it was of much value to all who attended. Meetings of this sort have a double value; first, in bringing all new and up-to-date methods and material to the attention of the field men, and, second, in disproving erroneous ideas and wrong conclusions.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Huntley.

During the week ending November 11, the maximum temperature was 68; minimum temperature, -13; precipitation, .18 inch.

The harvest of sugar beets was completed during the fore part of the week. A snowfall of about 6 inches, on November 9, followed by severe freezing, has stopped the beet harvest on the project. This work was about 90 per cent. completed. The harvest of beets was not started until about October 1, because of the immaturity of the beets, and it appears that the sugar content will run lower than usual during the entire season. This is especially true in districts where hail occurred during the growing season.

Yields of sugar beets and other data relating to the test in the root louse control experiment are given below:

Field C-IV: Plats 1 to 6, inclusive, were cropped to beets in 1914 and 1915. Plats 7 to 9, inclusive, were cropped to beets in 1915, and oats in 1914.

All of these plats were plowed 8 inches deep in the fall of 1915, and double disked, harrowed, and leveled before planting in the spring of 1916.

The beets were planted on May 4, 1916.

The "wet" plats were irrigated July 13 and 24, August 5, 14 and 28.

The "ordinary" plats were irrigated July 13, August 4, and 21.

The "dry" plats were irrigated July 31 and August 21.

Field L-II: This field was cropped to barley in 1915 and broken up from native sod in 1914. The land was prepared for planting beets by plowing 8 inches deep in the fall of 1915 and double disking, harrowing and leveling immediately before planting in the spring of 1916.

The beets were planted on April 23, 1916.

The "wet" plats were irrigated on the following dates: July 12 and 28, August 5, 14 and 28.

The "ordinary" plats were irrigated on July 12, August 4 and 21.

The "dry" plats were irrigated on August 1 and 21.

In the following tables a comparison is given between the sugar contentof beets not infested and beets very badly infested with root lice. In practically every instance the sugar content was reduced where the beets were badly infested.

The results indicate that in field L-II the infestation was greatly reduced by the application of an unusually large number of irriga-

Huntley (continued).

tions and that the yields of beets was highest on the plats that were irrigated five times, while in field C-IV on old beet land both the yields and amount of infestation vary but slightly in the "ordinary" treatment plats that were irrigated three times and the plats that were irrigated five times.

Field C-IV.

Plat No.	No. Irrigations.	Yield per acre, tons	Sugar content, per cent. Not infested	infested	Average sample	% beets injuriously infested.
C-IV-3	2	9.32	18.4	15.4	17.8	23.6
-6	2	8.52	17.0	17.4	15.8	28.3
-9	2	11.06	17.3	16.1	15.3	22.0
Average of 3 plats ("dry")	2	9.63	17.6	16.3	16.3	34.6
C-IV-2	3	10.78	18.8	16.5	18.2	6.7
-5	3	11.23	19.1	17.9	18.0	13.0
-8	3	13.08	16.8	15.4	16.5	8.9
Average of 3 plats ("ordinary")	3	11.70	18.2	16.6	17.6	9.5
C-IV-1	5	10.36	18.1	17.6	17.7	10.4
-4	5	11.90	19.1	17.6	18.8	9.2
-7	5	11.12	17.4	15.8	16.6	10.3
Average of 3 plats ("wet")	5	11.12	18.2	17.0	17.7	9.9

Field L-II

L-II-13	2	17.04	12.0	10.3	12.0	38.2
-16	2	11.50	13.5	12.2	13.7	36.5
Average of 2 plats ("dry")	2	14.27	12.7	11.2	12.8	37.3
L-II-14	3	19.08	11.0	9.0	13.3	30.5
-17	3	15.28	13.4	12.2	12.1	21.3
Average of 2 plats ("ordinary")	3	17.18	12.2	10.6	12.7	25.9
L-II-15	5	18.72	15.1	12.2	13.7	15.9
-18	5	18.97	13.7	11.7	13.7	12.3
Average of 2 plats ("wet")	5	18.84	14.4	11.9	13.7	14.1

Huntley (continued).

Irrigated Rotations - fields K and L-IV.

All crops except corn have been harvested.

Fall plowing has been delayed by cold weather. Twenty plats remain to be plowed.

On account of the sugar tests from the factory not all being in at present, the sugar beet yields will be given in a later report.

The potato yields for all plats in the irrigated rotations for the year 1916, and a comparison of the average yields for four previous years, are given in the following table.

Rotation No.	Plat No.	Stand per acre	Pounds per plat	Bushels per acre	% marketable tubers
4 C C	K-IV- 21	6784	2630	175.3	85.4
20	K- V- 5	8000	3415	227.7	88.1
21	- 13	7168	4404	293.6	88.9
24	- 9	8192	3543	236.2	90.4
25	-IV- 6	8384	4863	324.0	92.4
26	-V- 11	8064	4182	278.8	90.0
27	20	2944	680	45.3	80.4
30	-IV- 17	6080	3367	224.5	92.2
31	-III-15	7360	3181	212.0	86.4
40	-IV- 3	7680	3701	246.7	92.6
44	13	6976	2490	166.0	89.3
60	-III-12	7488	4380	292.0	91.9
61	6	8640	6026	401.7	94.7
34	L-IV- 4	4316	3816	254.4	94.2
35	3	3380	3056	203.7	94.3
C C	9	3068	2066	137.7	95.6
64	17	2860	2518	167.9	94.7
Average,	1916	6317	3430	228.7	90.7
	1915	7752	4542	301.8	94.3
	1914	5296	2516	167.8	83.9
	1913	4242	3190	212.7	95.4
	1912	-	3666	244.3	-

The spring pigs used in hogging off the corn plats in rotation 67, field K, and rotation 69, field L-IV, were taken off-the former on October 13, and the latter on October 31.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Huntley (continued).

The results obtained from each of the two lots are given in tables below.

Hogging off corn experiment - One-quarter acre - Rotation 67, field K, 1916.

No. of hog.	76	77	81	83	Total	Average
No. of days.....	20	20	20	20	..	..
Breed.....	Duroc	Duroc	Duroc	Duroc	..	..
Sex.....	Barrow	Barrow	Gilt	Gilt	..	..
Initial weight.....	97	93	102	87	379	95
Final weight.....	144	128	151	124	547	137
Gain.....	47	35	49	37	168	42
Av. daily gain.....	2.35	1.75	2.45	1.85	8.40	2.10
% daily gain.....	2.02	1.58	2.00	1.81	..	1.85
Lbs. pork per acre per day.....	9.40	7.00	9.80	7.40	33.6	8.40
Lbs. grain consumed..	..	..	..	..	1037.9	..
Net returns per acre.	..	..	..	..	$47.04	..
Lbs. grain per lb. gain	..	..	..	..	6.18	..
Cost per 100 lbs. gain	..	..	..	..	$6.18	..
Returns per bu. corn	..	..	..	..	$.79	..
Estimated yield per acre, bus.	..	..	..	..	59.99	..

Hogging off corn and rape experiment - One-half acre - Rotation 69, field L-IV, 1916.

No. of hog.....	78	79	80	82	Total	Average
No. of days.....	38	38	38	38	..	..
Breed.....	Duroc	Duroc	Duroc	Duroc	..	..
Sex.....	Gilt	Barrow	Gilt	Barrow	..	..
Initial weight.....	85	78	85	82	330	82
Final weight.....	162	151	156	154	623	156
Gain.....	77	73	71	72	293	74
Av. daily gain.....	2.03	1.92	1.87	1.89	7.71	1.93
% daily gain.....	1.71	1.76	1.59	1.66	..	1.68
Lbs. pork per acre per day.....	...	..	..	..	15.42	..
Lbs. grain consumed..	..	..	..	..	1773.9	..
Net returns per acre.	..	..	..	..	$41.02	..
Lbs. grain per lb. gain	..	..	..	..	6.05	..
Cost per 100 lbs. gain	..	..	..	..	$6.05	..
Returns per bu. corn	..	..	..	..	$ .81	..
Estimated yield per acre, bus.	..	..	..	..	50.77	..

Huntley (continued).

The rape at the time the hogs were turned into the corn had made but little growth. Approximately a week was required to completely clean up all the rape.

Scottsbluff.

During the week ending November 11, manure and straw were hauled on field K and plowed under. A number of alfalfa plats on field K were also plowed under.

Two men were employed in getting the sheep pens ready for the lambs which are expected to arrive the following week. The shipment of lambs has been delayed for practically three weeks on account of car shortage.

On November 10 snow began falling, and there was a decided fall in the temperature, the thermometer registering 9 degrees above zero on the 11th.

All of the shoates have been sold. The price for this kind of stuff is very low at this time. The first offer made for the shoats was $7.25 per hundred. The prices finally obtained were $8.10 for the heavy stuff, and $8.00 for the light stuff. With corn selling at $2.00 a hundred, feeders were afraid to undertake the proposition.

All the sugar beets have been harvested. The yields will be given in a later report.

Dairy Report for the Month of October.

Two new cows have been secured for the herd, bringing the herd up to the desired number of cows. The last two cows that were purchased seem to be exceptionally good animals for common cows.

The milk yield during the month has been very satisfactory, and incidentally some very interesting observations have been made in regard to the different feeds given the cows during the month. The last week in September and up to and including October 8th the cows were fed sliced mangels and pumpkins. These were run through the beet cutter. The second period they were fed squash, mangels and cotton seed meal. When the mangels, squash, and pumpkins were gone the cotton seed meal was supplanted with some shorts. The results of the feeding tests were as follows:

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Scottsbluff (continued).

	Maud. Milk-Lbs.	Marie Milk-Lbs.	Mable Milk-Lbs.	Hulda Milk-Lbs.
First Period..	89.1	123.3	136.7	98.35
Second Period.	92.4	131.5	152.9	107.30
Third Period..	34.45	114.8	140.3	107.45

Between each period three days were allowed for the cows to adjust themselves to the new feed.

The following table gives the results of the work for the month of October. The hay is valued at $10 per ton, cotton seed meal at $46 per ton, and shorts at $33 per ton.

Lbs. milk	BUTTER FAT. Av. test	Total Lbs.	Market price	Value of	Cost per lb.	Hay value	Cotton seed meal value	Shorts value	Total feed cost	Profit
Mable 850.8	3.2	27.21	35¢	$9.52	22¢	$4.65	$1.15	$.19	$5.99	$3.53
Marie 738.35	3.0	22.15	35¢	7.75	27¢	4.65	1.15	.19	5.99	1.76
Maud 531.85	3.6	19.14	35¢	6.69	34.9¢	4.65	1.15	.19	5.99	.70
Hulda 630.2	3.3	20.79	35¢	7.62	28.7¢	4.65	1.15	.19	5.99	1.63
Rose 579.8	2.8	16.23	35¢	5.68	36.9	4.65	1.15	.19	5.99	-.31

Skim Milk.

	Total pounds	Value per cwt.	Total value
Mable	722.93	25¢	$1.81
Marie	627.60	25¢	1.57
Maud	452.07	25¢	1.13
Hulda	535.67	25¢	1.34
Rose	492.83	25¢	1.23

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Belle Fourche.

During the week ending November 11, the maximum temperature was 71; minimum temperature, -1; precipitation, .33 inch.

Corn was hauled in from field O and field D on the dry land.

Two four-horse teams were employed part of the week in plowing field A, and one two-horse team in spring tooth harrowing.

The latter part of the week the men were employed in starting work on a drainage ditch, putting in a headgate in the dam, fencing, hauling water and hay for the horses, and feed for the hogs and sheep.

The results obtained in the experiment in feeding corn to spring lambs are given in the following table.

Rotation 71

Dates	No. of days	No. of lambs	Weights		Gains.			Return from plat
			Initial	Final	Total	% daily	per day per lamb	
9/6-9/16	10	10	652	706.5	54.5	.792	.545	$ 3.82
9/16-9/26	10	10	706.5	688.5	-18.0	--	-.18	- 1.26
9/26-10/6	10	10	688.5	761.5	73.0	.98	.73	5.11
10/6-10/16	10	10	761.5	742.0	-19.5		-.195	- 1.37
10/16-10/26	10	10	742.0	782.0	40.0	.556	.40	2.80
10/26-11/4	9	10	782.0	804.5	22.5	.32	.25	1.57
11/4-11/3	4	10	804.5	805.0	.5		.012	.04
Totals	63	..	652.0	805.0	153.0	.336	.243	$10.71

On September 6, these lambs were put on the third cutting alfalfa on the second year plat and on the quarter-acre corn plat. During the period from October 6 to 26 they were also allowed to run to beet tops from one quarter-acre plat. The average yield of alfalfa hay from the third cutting was 1.01 tons per acre, with a value of $6.00 per ton. The usual charge allowed for pasturing beet tops is $3.00 per acre. The estimated yield of corn on the plat was 52.9 bushels per acre. After deducting the value of alfalfa and beet tops fed, and allowing 7 cents per pound for the lambs, the price paid per bushel for the corn is 63.8 cents, or a net return of $33.78. Using the present market price of lambs, 9.5 cents per pound, they show a net return of $49.04, or 92.7 cents per bushel for the corn.

The estimated yields of two plats actually harvested were 2.4 bushels and 7.8 bushels per acre, respectively, higher than the yields harvested.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Belle Fourche (continued).

Corn Yields, field D, 1916.
(Planted to Payne's White Dent, showing plat variation).

Plat No.	Yield per plat		Yield per acre	
	Grain Lbs.	Stover Lbs.	Grain Lbs.	Stover Lbs.
1	170	198	9.9	921
2	195	208	11.3	964
3	220	227	12.8	1056
4	195	164	11.3	763
5	310	238	18.0	1107
6	325	300	18.9	1395
7	295	240	17.2	1116
8	320	232	18.6	1079
9	340	262	19.8	1219
10	360	256	20.9	1190
11	384	272	22.3	1265
12	420	274	24.4	1275
13	400	252	23.2	1172
14	404	242	23.5	1125
15	386	252	22.4	1172
16	388	230	22.6	1070

Area of plats..... .215 acre.
Corn figured 80 lbs. per bushel.

Corn Yields - Variety Test.

Variety	Yield	% matured	Rank
Northwestern dent.....	42.2	60	5
Minnesota King.....	26.3	0	13
Payne's White Dent.....	43.8	40	3
Disco 90-Day.....	26.5	10	12
Northwestern X Disco....	39.4	20	7
Many Colored Squaw.....	46.2	35	2
Australian White Flint..	35.3	0	9
Early Huron.....	25.8	0	14
Disco 85-Day.....	41.4	60	6
Selection 133.....	33.9	10	10
Marten's White Dent.....	38.8	10	8
Gehu Flint.....	46.6	100	1
Dillman's.....	32.1	0	11
Scoter's.....	42.9	60	4

Field Notes.

Belle Fourche (continued).

Corn yields, Field P.

Plat No.	Fall irrigated. Grain, bus.	Fall irrigated. Stover, lbs.	Not fall irrigated. Plat No.	Not fall irrigated. Grain, bus.	Not fall irrigated. Stover, lbs.	Diff. favor of fall irrigation Grain, bus.	Diff. favor of fall irrigation Stover, lbs.
II-12	50.4	3450	I-12	47.9	3350		
IV-12	45.4	3100	III-12	53.9	3300		
Average	47.9	3275	Average	50.9	3325	-3.0	-50

Corn figured at 80 pounds to the bushel.

Umatilla.

During the week ending October 28, the maximum temperature was 73; minimum temperature, 17; precipitation, .44 inch.

The rain of October 28 was the first fall rain. It was of material benefit to the cover crops which had been sown early but had not germinated for the want of moisture.

The feterita from the rotation plats in D4 was threshed.

Mr. F. L. Kent, Crop Report for the State of Oregon, of the Bureau of Crop Estimates, visited the farm.

During the week ending November 4, the maximum temperature was 65; minimum temperature, 40; precipitation, .40 inch.

The irrigation system in the orchard in C2 was changed. Contour ditches have been dug and the trees will be flooded from them instead of irrigated by furrows as in the past.

The seed from the onion seed experiment was threshed during the rainy days.

Mr, Allen left on the 2nd for Washington.

Mr. Dean talked to the Hermiston Parent-Teachers' Association on beautifying the home grounds.

During the week ending November 18, the maximum temperature was 36; minimum temperature, 3.

An unusually early cold spell of weather began Sunday. The evaporation tank froze Sunday night, and has not been melted since. Never before has it frozen until December. The water dripping from the lysimeters froze up the recording device, and has frozen in the funnels so as to stop the dripping.

Three borders were constructed and put into alfalfa for a length

Umatilla (continued).

of run experiment last spring. The following table gives the amount of water used for the season:

Border	Dimensions	Acre-Feet Water
A - Short	100 x 22	5.88
B - Medium	175 x 22	5.87
C - Long	250 x 22	8.51

The amount of water used shows the medium length of run to be as economical of water as the short run; however, 44 per cent. more water was used on the long border. These results were secured with heads of water averaging from 1-1/4 to 1-1/2 second feet. The amount of water used on the long border could probably be reduced with a larger head but it is doubtful if the others could be irrigated much more economically.

The following table gives the production of hay and the amount of water used on the interval of irrigation of alfalfa experiment:

Interval of irrigation	Tons of hay per acre.	Acre-feet of water	Tons of hay per acre-foot
1 week	6.72	7.00	.96
2 weeks	6.36	3.67	1.74
3 weeks	4.25	2.33	1.82

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Tieton.

During the week ending November 11, 20 farms were visited, 7 calls for assistance were received, and 1 office conference was held. Ten of the farm visits were in regard to the advisability of attempting to organize a cooperative cheese factory at Harwood, in the Wide Hollow section of the Project.

Three farmers, Messrs. Alexander, Lennington and Wilson, borrowed money from a local bank upon terms described in the report for the week ending November 4. The bull purchased under this arrangement is a yearling. His dams on both sides have very good official and semi-official records and the price was $225. Mr. Alexander is milking 15 cows and plans to increase his herd to 20; Mr. Lennington is milking 5 and plans to increase his herd to 8 or 10; and Mr. Wilson is milking 8 and plans to increase his herd to 10. At present the bull heads a combined herd of 28 cows, and if present plans carry the herd will number about 35 or 40 cows next year. Mr. Alexander will feed and shelter the bull in view of the fact that he has the largest number of cows.

Another farmer is slaughtering his grade bull and will breed two or three cows to the bull mentioned above. In the spring a pure bred bull will be placed at the head of this herd also.

There is considerable trouble with cows freshening this fall. A number of calls have been received in regard to parturition and udder inflamation. The one herd on the Project known to be affected with contagious abortion has had normal births for nearly a year and heifers calving for the first time are normal. A number of calves are born with goiters and the hairless pig problem is still an active one. From observation only it seems that there has been less trouble in raising colts this season than there was in 1915, when a large number of colts were born with deformed and weakened bones and joints.

Uncompahgre.

During the week ending November 11, 11 calls for service and information were received; 8 farm were visited; and 2 herds were tested for butterfat.

A snowfall on Monday which covered the upper half of the Project made the roads very muddy. The temperature has fallen as low as 10 degrees above zero during the week.

Assistance was given 3 farmers interested in the purchase of

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Uncompahgre (continued).

pure bred bulls for dairy herds. The bulls desired are of the Holstein breed.

Irrigated pastures were discussed with two farmers who are interested in the subject.

Butterfat at the Montrose Creamery is bringing 37¢ and 40¢ at the Delta Cheese Factory.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Belle Fourche.

During the week ending November 18, the maximum temperature was 59; minimum temperature, -18; precipitation, .05 inch.

Berries and small fruits on the dry and irrigated land were covered.

Some breaking with a four-horse team was done on the new 80 acres west of the horse pasture and some spring tooth harrowing in field A with a two-horse team.

A high board fence was put up at the north end of the new barn mainly for a windbreak.

A greater part of the week was spent by the men in digging a ditch for a tile drain in field A, hauling water and feed for the stock, and cleaning up around the buildings.

San Antonio.

During the week ending November 11, the maximum temperature was 85; minimum temperature, 34; greatest daily range, 38. The total precipitation was .41 inch.

Plowing of C5 was completed and plowing of cotton plats in the rotation experiments was started. Cotton stalks were raked and burned. Oats were planted on the rotation plats. Field peas were also planted on the rotation plats.

Mr. Davidson returned to the farm during the week to complete the cotton work for the season.

During the week ending November 18, the maximum temperature was 75; minimum temperature, 26; and greatest daily range, 39. The total precipitation was .22 inch. The first frost of the season occurred on the morning of the 14th, when the minimum temperature recorded was 29. Minimum temperatures of 26 were recorded on the mornings of November 15 and 16.

Wet, cold weather prevented any outside work on Monday and Tuesday. Plowing of cotton plats in the rotation experiments was continued. Burning of cotton stalks was completed. Flax varieties were planted on field C5 on Saturday. A supply of wood for the winter was hauled. All forage crops were cut immediately after the frost.

San Antonio (continued).

The pig feeding experiment was concluded early in the week, the pigs having reached a size where they ceased to make profitable gains. Four of the largest hogs were marketed locally and sold at $9.50 per cwt.

Yuma.

During the week ending October 28, the maximum temperature was 92; minimum temperature, 38; greatest daily range, 48. Eight acres only were irrigated.

Clearing was continued on series D and E. Dates on BA-25 were hoed.

Grain sorghums were harvested from fields D-6 to 9 and E-5 and 6, and the land plowed. The following head yields were secured under the varied cultivation methods.

Variety	Planting method	Date planted	Plat	Yield per acre head grain
Dwarf milo	Thinned to 21"	June 28	D6&7	1894
do	do	do	D8&9	2795
Average				2345
Dwarf milo	Unthinned to 12"	do	D6&7	2950
do	do	do	D8&9	3302
Average				3126
Feterita	Thinned to 21"	do	D6&7	1972
do	do	do	D8&9	2089
Average				2031
Feterita	Unthinned to 12"	do	D6&7	1972
do	do	do	D8&9	2281
Average				2127
Feterita	Bed-furrow	July 8	E3&4	1972

The average number of stalks per plant of the Dwarf milo variety was 2.2275 where the plants were thinned to 21 inches apart, and 2.50 where the plants were unthinned, 12 inches apart. The average number of good heads and chaffy heads was 1.915 and .6915, respectively, when the plants were thinned to 21 inches apart, and 2.34 and .31, respectively, when the plants were not thinned, 12 inches apart.

The average number of stalks per plant of the variety Feterita was 2.105 where the plants were thinned to 21 inches apart, 2.865

Yuma (continued).

where the plants were unthinned, 12 inches apart, and 2.17 under the bed-furrow method of planting. The average number of good heads and chaffy heads was 2.44 and .95, respectively, where the plants were thinned to 21 inches; 3.20 and .94, respectively, where the plants were unthinned, 12 inches apart; and 2.008 and .91, respectively, under the bed-furrow method of planting.

A second cutting of sudan grass for a seed crop was harvested from B-1 to 4.

Ripe castor beans were again harvested. The most serious difficulty of the handling of castor beans has been the harvesting, as the mature seed dry and burst out of the pod immediately upon maturity and before many other pods on the spike are mature.

Fruit notes of pomegranate varieties were completed and the balance of the fruit given to school children.

The abundance of diseased fruits among nearly all varieties was about the same as last season. There is still noted however an apparent resistance to this injury by some plants.

Mr. Scofield arrived at the station on the 25th, spent Thursday and Friday in the Imperial Valley, and returned on Sunday with Dr. K. F. Kellerman.

During the week ending November 4, the maximum temperature was 90; minimum temperature, 37; greatest daily range, 53. Eight acres were irrigated.

The following lands were plowed: B-1 to 4, and A-9. All plowed lands were dragged and retouched in preparation for irrigating and planting.

Alfalfa was harvested from B-6, 7 and 8, D-18, 19, 22 and 23.

Cowpeas planted July 12 on D-1 to 5, plowed under as green manure on October 12, produced green matter per acre, as follows: Griot, 6.09 tons, Brabbam, 3.73 tons.

Those varieties planted on C-1 to 5, August 7, plowed under October 25, produced green matter as follows: Blue Whippoorwill, .449 tons per acre; Whippoorwill, 3.91 tons per acre.

Mr. Scofield left the station on October 31 for San Antonio.

2 December, 1916.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Huntley.

During the week ending November 11, 4 farm visits were made.

The first annual short horn cattle show, given by the Montana Short Horn Breeders, was attended at Billings during the week. The attendance was small, but the exhibition was a creditable one. Most of the animals exhibited were sold at public auction after the show. They brought an average price of $247.50. The top price for a male was $560, and for a female, $325.

Very bad weather was experienced on Friday and Saturday of the week ending November 11. A little snow fell and the temperature fell to 13 degrees below zero on Saturday night.

Uncompahgre.

During the week ending November 18, 10 farms were visited, 12 calls for information and services were received, and 1 herd of 5 cows was tested for butterfat.

Some very cold weather for November was experienced during the week. The temperature dropped to 3 degrees below zero. This has had a serious effect on the beet growers, since the frozen ground makes the harvesting of the crop quite difficult.

Several farmers are interested in the matter of grinding or cutting the damaged hay and mixing with it a low grade of molasses from the sugar factories to increase its palatability. Prices were obtained for these farmers and also information as to its feeding value. The Colorado station found its value to be three-fourths its weight of corn. It can be purchased at $20 per ton where the containers are furnished by the purchasers. It is the plan to run a trial with one or two farmers to determine if it will be practicable to feed. It is found at the Colorado station that 15 pounds of molasses is used to 100 pounds of hay.

Assistance was given three farmers in getting together on the purchase of a carload of barley for feeding to hogs. It was found that the barley could be purchased in limited quantity at $1.70 per cwt. This is the cheapest feed obtainable at present prices.

An illustrated lecture on dairying was given to the farmers at the Montrose Grange, Thursday evening. There were 40 people present.

A lamb feeding project was visited during the week where 1600 lambs are being fed on alfalfa and beet tops. They are showing good gains and are consuming 1 ton of alfalfa and 3 loads of tops per day. The beet tops average about 2500 pounds to the load.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise.

During the week ending November 18, 14 farm visits were made, and 2 farmers called at the office.

The report for the seventh month's work of the Boise Valley Cow Testing Association has just been received. The report shows 437 cows on test with an average production of 28.87 pounds of butterfat. 45 cows are on the honor roll for the month, having produced 40 pounds or more of butterfat. Of this number, 10 were in the Hulbert herd of registered Holsteins which were sold last week. This herd also held the highest herd average, 42.13 pounds for the month, and the highest average for 7 months.

A meeting of the association was held at Meridian on Nov. 17, at which tester H. H. Beier gave a report on the first 6 months' work. Some very interesting matters were presented in this report, a part of which is submitted herewith.

The opinion of members of the association who were present seemed to be that the association work was well worth while and should be made permanent.

The program of the meeting included discussions of silos, pastures, dairy-farm sanitation, and its relation to quality of cheese and butter, bull associations and contagious abortion. The last subject was discussed by a local graduate veterinarian. It was interesting to note the entire lack of conformity of matter presented in his discussion with that presented by Dr. F. E. Murray, of the Salt Lake office of the Bureau of Animal Industry, on the same subject at the recent conference of dairy-field-men.

The Hulbert herd of Holsteins which has been shipped to Weiser, Idaho, this week, was given the thermal tuberculin test by this office. 32 animals were tested, none of them showing any evidence of a reaction. 43 haad were sold, a number being young calves which were not tested. The price paid was $9,000.

The B. L. K. Milking machine which has been in daily use with this herd for several years was sold with the herd.

The dairy herds of Messrs. Rees, Merritt, Horrace, Whitney, Zeisler and Frank, and that of the State farm, were tested for butterfat this week. These herds represent 4 communities where an effort will be made to establish cow testing clubs later on.

North Platte.

During the week ending November 4, 9 requests for service were received, 7 farm visits were made, 2 outbreaks of cholera were found, 133 hogs were vaccinated in 3 herds. Most of the week was

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte. (continued).

spent in the office doing general office work.

Large quantities are being shipped out of the Valley each week. The yield this year has been good and the price high, making potatoes a very satisfactory cash crop this year. Corn is selling for $1.65, shorts, $1.60; and bran, $1.55 per cwt. Butter fat sold for 35¢.

The hog shipments from the valley have been unusually light during the past few weeks. It is probable that the October shipments have been lighter this year than they have been for 2 years. The shipments of sheep into the valley for feeding purposes have also been greatly reduced this year over last year for the month of October. Judging from reports received from the railroad agents in the valley (which are not yet complete) only about one-third as many sheep were shipped into the valley during October, 1916, as during the same period in 1915.

During the week ending November 11, 12 requests for service were received, 10 farm visits were made, 2 outbreaks of cholera were found, and 247 hogs were vaccinated in 4 herds. It was necessary to revaccinate a herd of 210 shoats that had been vaccinated with the serum alone on August 28. In this case it appears that the serum slone protected the shoats for about 70 days when they again became infected either through harbored infection or by being reinfected from an outside source. The double treatment was given all shoats showing a normal temperature this time. This is the first herd that has been given the double treatment for over 2 years.

During the week a series of Junior Institutes were held at several of the school houses on the Project. These institutes were held through the effort of the County Superintendent of schools, the principal speakers being furnished by the Extension Department of the State University. On Wednesday evening, an illustrated lecture was given at a school house where on the of the institutes was being held. Had not other work interfered, several such lectures would have been given.

A visit was made to a farm where some hogs had been vaccinated for cholera on October 11. For some reason the vaccinated hogs continued to get sick and die. The vaccination did not seem to stop the spread of the disease in the herd, though it did check it somewhat. The reason for the spread of the disease is unknown. It is not thought that the serum used was impotent. It may have been due to the hogs having been in an unhealthy condition when vaccinated, consequently, the serum could not protect them in their rundown condition.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

During the week ending November 18, there was a decided drop in the temperature; on Monday morning the temperature was 21 degrees below zero. Considerable snow fell during the latter part of the week and stopped operations in the beet fields. It is estimated that about 7½ per cent. of the sugar beets still remain unpulled.

The latter part of the week was spent with Mr. Magruder on the Shoshone Project, and with Mr. Christopher on the Huntley Project, and at the Experiment Farm at Huntley. Most of the time on the Shoshone Project was spent visiting farmers with Mr. Magruder. Several good swine herds and dairy herds were visited. On account of snow being on the ground, it was not possible to get any information concerning the irrigated pastures other than that secured from the farmers by Mr. Magruder. It seems that they are a success, however.

On the Huntley Project several irrigated pastures were visited, most of which are very promising, and the farmers seemed quite enthusiastic about them. From information received from Mr. Christopher and others on the Project it is quite probable that there will be a marked increase in irrigated pastures this coming year.

Minidoka.

Snow storms on Sunday and Monday of the week ending November 11 delayed the fall work with the result of a large number of calls. Because of the high prices of all feed crops, calls in regard to economical and profitable feeding are becoming numerous, 14 calls in regard to this one problem having been received.

Of the 19 farms visited, 3 were in connection with the range sheep and 4 with sheep on the farms, 5 in connection with problems of the swine growing industry, 2 in regard to beef cattle problems, 3 for dairy problems, and 3 in regard to general farm plans in their relation to the live stock industry.

The week ending November 18 was characterized by unusually cold weather, the temperature dropping to 2 and 1 below zero on Sunday and Monday nights, and hovering below the freezing point all week. Approximately one-fourth of the beet crop was frozen tight in the ground. A few fields of potatoes were not yet dug. In some instances where the potatoes were being held for cars they had not been protected with sufficient care to withstand such cold weather, with the result of some losses.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Minidoka (continued).

Three days of the week were spent in connection with the swine growing industry, visiting district leaders and survey men, securing information on the exact situation, answering requests and planning for the mid-winter meetings. This year it is planned to have a part of the meetings on the farms, selecting the farms of the men who have good stock, good hog houses, and good methods of care and feeding, giving demonstrations of types and breeds, methods of management, and the sanitary precautions necessary to keep the hogs healthy and preventing disease. Assistance in this work is being given by Dr. Sullivan, of the Bureau of Animal Industry.

Of the remaining 3 days of the week, 2 were spent in answering requests and work with the dairy and sheep industry, and 1 in attending the quarterly meeting of the Minidoka County Pomona Grange.

Wheat is $2.60, and barley, $1.90 per cwt., but it is difficult to obtain either. Corn is being shipped in and sold at $2.40 at Rupert and $2.50 at Burley. Hay is selling at $12 a ton in the stack. Market hogs are $8.00. Butter fat is 38 cents with 1 cent deducted for each pound of cream.

Truckee-Carson.

The greater part of the week ending November 4 was spent in attending a conference of extension workers in the western states, held at Salt Lake City, Utah. The conference consisted principally of western dairy division men. Some of the questions discussed were herd testing associations, bull associations, cor barns and corrals, contageous abortion, and cheese manufacturing. The discussions were very lively at times, and it is certain that the extension work means more to the workers after having participated in such a meeting than before.

There has been a recent outbreak of black leg on what is known as the Swingle Bench. This is the first outbreak so far reported from that section. The ranchers considered the high bench lands of this neighborhood free from black leg infection. The outbreak occurred soon after the cattle were turned from the feeding yards on to the alfalfa stubble after the third crop had been taken off. Four deaths occurred in 2 herds. All young animals in these herds are now immunized against black leg and will be kept so hereafter.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Truckee-Carson (continued).

Considerable time during the week ending November 11 was devoted to cooperative shipments of hogs. One car load of heavy hogs will be shipped out on the 15th. Space has been reserved for 3 cars of hogs to be shipped out on the 25th. People who have hogs on hand are being induced to put them into marketable condition since feeding tests have proven that it is much better to finish hogs even on $40.00 per ton grains than to sell at a sacrifice as stock hogs. The last shipment of hogs brought 8¢ for hogs weighing under 150 pounds, 8-3/4 for hogs weighing 150 to 170 pounds, and 9¢ for hogs weighing over 170 pounds. Shipping expenses amounted to 77¢ per hundred. This expense was larger than usual because the hogs were held at Fallon one day before shipping on account of car shortage. This necessitated the purchase of extra feed. The shrinkage on this car of hogs varied from nothing to 9 per cent., averaging about 6 per cent., thus netting the shippers about $7.70 home weights for the prime hogs.

During the week ending November 18 there were received 44 calls for assistance and 7 farms were visited.

On Wednesday, November 15, a cooperative shipment of 99 hogs was made from Fallon. Eight farmers took part in the shipment. The hogs averaged 200 pounds in San Francisco. The prices received were $9.25 for hogs weighing over 170 pounds, $8.75 to $9.00 for hogs weighing 150 to 170 pounds, and $8.25 for hogs weighing under 150 pounds. The average shrinkage on the car load was 7.7 per cent. The shipping expense amounted to 53.4 ¢ per hundred. This last shipment was the most satisfactory of any. This is largely due to the well loaded car and the uniformly good quality of the hogs.

The turkey growing industry is assuming such importance here that a movement has been started for the organization of a turkey growers' association. Such an organization can be of great benefit to the industry in the way of keeping its members informed on market conditions and best methods of growing and handling young turkeys.

Shoshone.

During the week ending November 5, 10 farm visits were made, 7 office calls were received, 6 other conferences were held, and 21 cows were tested in 2 herds.

One man was given a demonstration in removing retained placenta by working it loose with the fingers.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone (continued).

Cows are pasturing beet tops now. Since beet tops furnish cheaper nutrients than any other feed available, farmers are inclined to overfeed on beet tops. The cows are so fond of fresh beet tops that if they are given all that they want they will east nothing else and since beet tops are so bulky the cows cannot eat enough to keep up their milk production.

Pasturing cattle on the Forest Reserve range has not been satisfactory this year, the cattle having been returned in porr condition. Several men have said that they do not intend to send to the range next year. The cattle which are to be shipped this fall are being fed alfalfa hay on grain stubble.

The secretary of one of the Wisconsin cow testing associations was written regarding the prices of 5 weeks old heifer calves from grade Holstein cows which have a record of 300 pounds or 400 pounds of butterfat for a year.

During the week ending November 11, 5 farm visits were made, 3 men called at the office, and 4 other conferences were held.

The buying of a registered bull was discussed with one man. Assistance will be given him in his attempt to find a registered bull with an officially tested high producing ancestry, and which can be bought for a price within his reach.

Feeding beets to cows was discussed with one man. The feeding of a small amount of beets as a conditioner is advised when beet tops or corn silage is not available.

Cow production records were discussed with 4 men. The advantages of records in selecting cows, inseleeting heifer calves, and in proving the bull, were pointed out.

Shipping cattle was discussed with one man who shipped a car load to Omaha. The load was on the road just a week so that there was not only a heavy loss in weight from shrinkage but the price was reduced on account of the poor appearance of the cattle.

The feeding of breeding ewes was discussed with 2 men who are pasturing grain stubble and third growth alfalfa with the ewes.

During the week ending November 18, 9 farm visits were made, 7 office calls were received, and 3 other conferences were held.

A day and a half was spent with Mr. Chas. S. Jones visiting typical farms and discussing methods of doing demonstration work and of handling live stock.

Farmers who cooperated in the tests with Pringle Champlain wheat were sent blanks for reports on results of the test.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Shoshone (continued).

A test was started with W. Ball on the cost of finishing hogs for market on grain.

Construction of a dairy barn with the King system of ventilation was discussed with one man. Farmers are advised to keep milk cows in a tight barn in winter and to provide for ventilation.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Belle Fourche.

During the week ending November 25, the maximum temperature was 54; minimum temperature, 8; precipitation, trace.

Some sub-soiling was done in field A, some leveling in the horse pasture, and manure was hauled and spread on the garden and grounds.

A good part of the week was put in by most of the men in working on the drainage ditch in field A.

The rest of the week was spent in working on the buildings, fixing feed racks, hauling water and feed for the stock, and cleaning up about the farm.

San Antonio.

During the week ending November 25, the maximum temperature was 81; minimum temperature, 33; greatest daily range, 18. A heavy rain occurred on Tuesday night, the total precipitation being 1.95 inches.

Plowing of cotton plats in the rotation experiments was continued. On account of the wet soil, practically no other field work was done. Gravel and sand were hauled for the construction of a culvert at the entrance to the farm. Building of the gin-room was completed.

Yuma.

During the week ending November 11, the maximum temperature was 82; minimum temperature, 35; greatest daily range, 47. Frosts occurred in spots in various sections of the Project. Twenty-two acres were irrigated.

The first Yuma County Fair was held at Yuma on the 8th and 9th. Although this Fair was not arranged or advertised until late a very creditable display of live stock, farm crops, and produce was exhibited. The California side of the Project also participated in these entries.

Some levelling of recently plowed lands on fields C and D was completed in preparation for planting. D-1 to 9 was seeded to Peruvian alfalfa.

The following lands were plowed: B-1 to 4, Sudan grass stubble;

Yuma (continued).

D-18-19 and 22, alfalfa; and E-5 and 6, Sudan grass with a small crop as green manure. The seedling fig orchard was disced.

Alfalfa was cut on B-6-7 and 8, D-18-19-22 and 23. Dwarf milo grain was harvested from C-6. Tuxtla cotton on border E-2 was picked, and picking of Kekchi cotton on A-14-3 was begun.

A part of the soil was hauled for use in pots necessary for moisture requirement work that Mr. Homer Martin is starting.

Messrs. C. G. Marshall and W. E. Townsend arrived at the station early in the week.

Scottsbluff.

During the week ending November 25, considerable cold weather occurred.

The foundation for the new cow shed was put in, and it is hoped to begin work on this shed within a short time. The ground was frozen hard and any outside work is extremely difficult. It has not been possible to do any plowing for the past two or three weeks, and indications are that everything is closed for the winter. An attempt was made to haul some manure but this was frozen to such an extent that the spreader would not handle it.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Uncompahgre.

The first part of the week ending November 25 was spent in assisting farmers with feeding operations with hogs. There has been considerable difficulty in working out a satisfactory feeding ration for fattening hogs. The cheaper feeds have nearly all been taken. A source of barley, rather limited in quantity, was found in the hills which is being purchased at $1.70 per cwt., f. o. b. Montrose.

Silos were discussed with two men. One of these men is considering the erection of either a stave or cement silo before next season.

Calls for information regarding the purchase of dairy cattle and beef animals from two farmers, were received and an effort was made to locate the desired stock.

The latter part of the week was spent in the San Luis Valley and en route, gathering data on the work of feeding peas to live stock.

Nine farm visits were made, and 7 calls for service and information were received.

Shoshone.

During the week ending November 25, 15 farm visits were made, 13 farmers called at the office, 12 other conferences were held, and 29 cows were tested in 5 herds.

Messrs. F. D. Farrell and Geo. A. Scott spent one day on the Project observing agricultural conditions and discussing with Mr. Magruder the methods of doing demonstration work and of handling live stock.

Assistance is being offered in arranging for the cooperative shipment of a car of cattle from the Project. Some farmers have only a few which they desire to ship and some one is needed to keep a list of these farmers with the kind and number of cattle which they desire to ship so that when enough cattle are listed for a carload, a shipment can be made. Unless farmers can arrange to ship their cattle cooperatively their only market is the local butcher.

On one farm 95 hogs, which average about 135 pounds, have been drinking about 2 gallons of water each day since they have had access to an Ideal self waterer in which the water is kept from freezing by a kerosene burner under the tank. The cost of kerosene used

Shoshone (continued).

is too slight for consideration.

The largest herd of beef cattle on the Project, consisting of 117 head, was sold at public auction. Four-year-old bred grade Hereford cows averaged $67.00. Spring calves from these cows averaged $30.00.

Tieton.

During the week ending November 18, 23 farms were visited; milk was tested on 3 farms; and the proposition of organizing a cooperative cheese factory was discussed with all farmers visited. Two conferences were held at the office.

The Washington Irrigation Institute met at North Yakima on Monday and Tuesday. The Institute is an organization composed of irrigation farmers, engineers, material men and others. The program this year had to do with problems of irrigation farmers, engineers and of solving the state water code question. A talk on the "Relation of the Quality of Livestock to Farmers' Incomes" was given during the part of the program devoted to farmers' incomes.

The first severe freeze of the winter occurred on November 12. The loss of potatoes and apples by frost has not been definitely reported. Potato growers had anticipated that their crops would be harvested by November 18, and a number of them were taken by frost. The apple damage is variously estimated but was probably not heavy. The Reclamation Service found frost from three to five inches deep in dry ground on the 13th.

The survey in regard to the interest in a cooperative cheese factory gave very encouraging results. It is planned to proceed with the proposition.

Butterfat is now selling at 37 cents on the farms. The Cowichee Cheese factory is continuing to pay 7 cents above the local market for butterfat in whole milk. Top hogs are quoted at $9.25 on the local market. The highest price reported for alfalfa hay is $15.50 per ton, loose, for a local sheep feeder. Practically no potatoes are moving on account of the car shortage, but the price is close to $35 per ton.

During the week ending November 25, the Cascade Livestock Show was held at North Yakima. Monday and Tuesday were spent at the Show in charge of the college students judging contest. Teams were en-

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Tieton (continued).

tered from Oregon, Idaho and Washington State colleges. Classes of dairy and beef cattle, of hogs, sheep and horses were judged. Idaho won the contest with Oregon in second place.

The Cascade Show holds a sale of pure bred and grade dairy cattle and of pure bred horses, sheep and hogs. The grade dairy cow sale showed a marked reluctance on the part of local buyers to take grade cows. Two high grade Guernseys sold at $42.50 each. The owner has had them for sale at $100 and $75 each, and last week sold an equally good cow for $100. There was practically no bidding on Jerseys, only 2 bringing over $40, and the next highest bidding being $21 on a rather poor lot. No grade Holsteins were offered.

The pure bred Holstein sale held on Thursday was the best event of the sale. Prices ranged from low to good, and a decided preference was shown for high class females. The consignments were distributed chiefly to Idaho, Montana, and Pacific coast breeders. The highest price bid was $550 for an aged cow. A two-year-old heifer from a 30 pound cow sold at $450. Second grade female stuff sold at from $125 to $250 each. The bull stuff offered was not of the best and sold accordingly. One yearling bull just reached the $200 mark, and a two-year-old sold at $100 even.

The sale of fat hogs, steers and sheep demonstrated the marked preference for finished stuff. The winning car of hogs sold at $10.25, which is a full dollar above the Seattle quotation for primes.

Two Tieton farmers bought pure bred Holstein bulls this week and another bought a pure bred cow. A number of other farmers were on hand at the sale to buy pure bred Holstein females but the individuals which had been selected were sold at prices above what the farmers thought they could afford. The interest in good quality of dairy stock is very good this fall, three farmers having requested assistance in locating good grade cows. Average cows can be bought anywhere and at any price but the good ones are scarce.

Huntley.

During the week ending November 18, 10 farm visits were made. One trip was made to Billings for the purpose of inspecting some Holstein cows and bulls. Twenty-four samples were tested for Project dairymen.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

Field Notes.

Huntley (continued).

During the week ending November 25, 16 farm visits were made. One public sale, at which a few Holstein cows were offered for sale, was attended. The cows in this sale that showed any evidence of being at all good ones sold for very high prices. The highest price paid was $126 for a very ordinary grade Holstein cow.

Messrs. F. D. Farrell, Geo. A. Scott, and Chas. A. Jones, Agriculturist for the North Platte Project, were visitors to the Project during the week.

Eight calves were vaccinated against black-leg.

FIELD NOTES.

Belle Fourche.

During the week ending December 2, the maximum temperature was 53; minimum temperature, 11.

Work on the tile drain in field A was continued and some work was done on the dam in preparation to turning water into the pond.

Some of the men were employed in sorting machinery, hauling water and feed for the stock, and cleaning up.

Truckee-Carson.

The following temperatures were recorded:
For the week ending November 11, maximum temperature, 60; minimum temperature, 17; for the week ending November 18, maximum temperature, 49, minimum temperature 1; for the week ending November 25, maximum temperature, 53, minimum temperature, 11; for the week ending December 2, maximum temperature, 65, minimum temperature, 13.

The teams were idle the first week in November, but since then work has progressed steadily in preparation of fields E, F and H for the rotations which are to be planted in the spring. The alfalfa roots were removed by means of the spring harrow after the field had been plowed. These roots were gathered and hauled off from the field.

Very cool weather prevailed during most of the month, a minimum temperature of 1 degree above zero being recorded on the 13th. This was the coldest weather for the month of November since 1907.

The hogs which were used in the alfalfa pasture experiment were shipped on December 2, making up a part of a three carload cooperative shipment. These hogs, of which there were 11 head, were removed from pasture the latter part of September and placed in a dry lot. The first weighing in the dry lot was on September 30. They were then placed on a three per cent. ration of rolled barley supplemented by all the alfalfa hay they would eat. They were weighed on October 9 and 24. The gains made during this period were very unsatisfactory, and on the latter date the pigs were changed to a $3\frac{1}{2}$ per cent. ration. Weighings were made again on November 7 and 16. The gains were better, but still unsatisfactory. On the latter date the ration was changed to giving all the barley the pigs would eat in an effort to get them in condition

Truckee-Carson (continued).

to ship on December 2. A record was kept of the barley feed weights and the hogs were weighed for the last time on the first of December. The gains during the last period were quite unsatisfactory, and all but one small pig will go on the market as prime hogs. During the last period of feeding it was observed that the pigs ate little or no alfalfa hay. Following is a summary of the feeding results from September 30 to December 1, inclusive.

No. of pigs.....	11	11	11	11	11
No. of days.....	9	13	14	9	15
Ration.....	3%	3%	3½%	3½%	unlimited
Initials weight, lbs. ..	1117	1154	1263	1414	1505
Final weight, lbs.	1154	1263	1414	1505	1805
Total gain, lbs.	37	109	151	91	300
Av. gain per pig per day, lbs.	.37	.58	.98	.92	1.82
Grain fed, lbs.	301.5	450	618	445	1340
Lbs. of grain to make 1 lb. gain	8.1	4.1	4.1	4.9	4.5
Cost per lb. of gain with barley at 2¢	16.2	8.2	8.2	9.8	9.0

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Uncompahgre.

During the week ending December 2, 9 farm visits were made. Twenty-three samples of milk were tested for 6 farmers, and 1 hog feeding test was begun. One lecture was delivered on general live stock work, and 6 requests for service and information were received.

The week was spent largely in making calls to farms where demonstration work in hog feeding and in dairy herd record keeping are carried on.

On Friday evening a talk was given on live stock with the slides. The interest in very keen in the pictures which are particularly well suited to the conditions on the Project.

Five farmers are feeding out steers on silage and alfalfa this winter with very good results. There is a very good market for all the available silage at $6.00 per ton. There were but two men feeding last season.

The local creamery is paying 40¢ for butterfat. They report a very good quality of cream. The conditions at the local plant are a great deal better since they were able to cut down the running expenses.

Hog prices are quite steady and feed a little cheaper. This is having the desired result of causing the farmers to finish their hogs in a better way.

North Platte.

The first 2 days of the week ending November 25 were spent on the Huntley Project. On Thursday the 132 shoats in F. O'Neil's feeding test were weighed for the third time. During the first 41 days the 132 shoats received a limited ration of corn and soaked spelt on alfalfa pasture. During that time they made an average daily gain of .51 lb. Average initial weight was 46.9 lbs. 3.2 lbs. of grain were required per lb. gain. The cost per 100 lbs. of gain was $4.23. Corn was valued at $1.40, and spelt at $1.25 per cwt. During the next 56 days the shoats hogged down corn. During this period they gained an average of 1.47 lbs. daily. Valuing the gains at $9.00 per cwt., the shoats paid a little over $20.00 per acre for the corn, and not over two-thirds of the corn is eaten. The test is being continued.

Several farmers were assisted in purchasing breeding stock in the Valley and 3 were advised concerning rations for hogs. The balance of the week was spent in the office.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

North Platte (continued).

During the week ending December 2, 4 days were spent at Lincoln in conference with various officials of the State University relative to work on the Project. Considerable time was spent in the dairy department. The members of this Department are quite willing and anxious to help in developing the dairy industry on this Project. It is probable that the U. S. Dairy Division representative located in this State will spend considerable time on the Project assisting in dairy work.

Last summer and fall 10 car loads of dairy cattle were shipped into this state from Wisconsin. These cattle were selected by Mr. Propps, the U. S. Dairy Division representative for this State. All were bred when shipped. Thus far, only two of the cows shipped in have lost their calves, and all who bought dairy cattle from these shipments are very well pleased. Mr. Propps states that calls are coming into his office for more dairy cows and that he expects to ship in quite a number of cows in the spring. The freight charges on dairy cattle from Wisconsin to eastern Nebraska are from $7.50 to $10.00 per head for a mixed car of heifers and cows, or $75 to $80 per car. This price also includes the cost of testing for tuberculosis. Mr. Propps has been buying good 2-year old springers for about $75 per head, yearlings for $50, and cows for $85 to $100.

The first prize in the County Boys' Pig Club contest this year was won by a 17 year old boy with 3 pure bred Duroc Jersey pigs. During the months of July and August the pigs received a ration of corn and ground wheat fed in self-feeder on alfalfa pasture. During September and October shorts were fed in place of ground wheat. The average initial weight of the pigs was 46 lbs.; final weight, 213 lbs; average daily gain for 123 days, 1.4 lbs.;age at the end of period, 7 months; lbs. of grain per lb. of gain, 2.76. The County prize in this case will be a pure bred pig. State Pig Club Agent McMillian informs Mr. Jones that there were more boys in Scott's Bluff County who completed the year's pig club work than in any other county in the State.

Boise.

During the week ending November 25, 15 farm visits were made, and 5 farmers called at the office.

Part of the week was spent in arranging for a number of future meetings, one of which will be held on Saturday of the week ending December 2, and one on December 7. The latter will be held for the purpose of organizing a cooperative cattle association.

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

In response to a circular letter to users of the National Forest Range, an expression strongly favoring a grazing association has been received, and after conference with the National Forest Supervisor, it was decided to attempt the organization soon, in order that users of the range may know what to depend upon.

A good Jersey bull was saved from the block this week as a result of the semi-annual meeting of the Cow-Testing Association at Meridian recently. At that meeting the desirability of using mature bulls that had "made good" was urged, and a man present has purchased one of two which were mentioned at that time. The consideration was $60 for one of the best bulls in breeding and individuality in the Valley. This is the second Jersey bull of the kind placed recently, and two others are wanted.

The effect of the association work is going to be strong for higher standards of dairy stock, especially sires, and better methods of feeding. Much credit is due Mr. H. H. Beier, tester for the association, for the efficient work he is doing and the keen interest he takes in questions aside from the mere running of tests and keeping of records. Mr. Beier is a graduate of a four-year agricultural course. The association was fortunate to secure his services and will be more fortunate if it can keep him another year.

There are now three testing associations in Idaho. Recently a request for information and assistance in organizing another was received from Weiser. It also seems possible to place another association in the Boise Valley by another year. The reorganization of the present association and the formation of another will be taken up soon.

During the week ending December 2, 17 farm visits were made, and 7 farmers called at the office.

Aside from one day spent in vaccination of a number of small herds and making general calls, one day was spent in making arrangements for winter meetings and attendance at two meetings. The greater part of the week was spent in doing general office work.

Huntley.

During the week ending December 2, 2 farm visits were made. A trip was made to Billings for the purpose of obtaining information from the Billings Sugar Company officials in regard to beet pulp feeding. The Billings Company is not doing any feeding on its own account,

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Huntley (continued).

but a rather large band of sheep and a few cattle are being fed in the company yards by individual feeders. The wet beet pulp is hauled directly from the factory to the yards and dumped into a trench just outside of the sheep corral and within reach of the sheep. The pulp is kept before the sheep practically all the time. Some alfalfa hay is fed but the main ration is the beet pulp. The cattle receive their ration in wooden bunks. Both the cattle and sheep seem to be doing well on this ration.

An effort is now being made to introduce beet pulp feeding on the Project, and it is likely that a few feeding trials will be attempted in cooperation with the Sugar Company this winter, that is, the Sugar Company will cooperate to the extent of obtaining the dried beet pulp for the farmers at the lowest possible figure. The Billings Sugar Company does not operate a pulp drier now, but is likely to do so next year.

Truckee-Carson.

During the week ending December 2, there were received 53 calls for assistance and 10 farms were visited. A greater part of the week was devoted to the cooperative shipment of hogs. Two cars, representing 19 shippers, were sent out on Saturday, and another shipment, representing 4 shippers, was arranged for the following Monday. Prime hogs are now quoted at $9.50 per 100 lbs. at San Francisco. If the two cars which were sent Saturday go through in good time, the shipping cost plus shrinkage should be very little more than $1.00 per 100 lbs. If the shipping cost can be kept within this figure, it will be the smallest expense per 100 lbs. of any shipment. Considerable time was devoted to the marketing of the Thanksgiving turkey crop. 105,000 lbs. of turkey were shipped from Fallon alone for the Thanksgiving market. The turkeys were almost all shipped out dressed at an average price of 25¢ per lb. for Fallon weights. In addition to this shipment of turkeys, about four tons of other poultry were marketed. From the appearance of the flocks of turkeys on the Project, the turkey crop has not been more than half sold off. Mr. Farrell, accompanied by Mr. Scott, reached this Project on Friday noon and left Sunday at 4 o'clock.

Tieton.

During the week ending December 2, 36 farms were visited, 6 calls for assistance were received, 1 office conference was held and animals

Tieton (continued).

were vaccinated against blackleg for 2 farmers. Twenty-seven of the farm visits were made primarily to assist in organizing a Cow-Testing Association which will include Tieton herds.

About 2 years ago an unsuccessful attempt was made to organize a Cow-Testing Association in the Ahtanum Valley. Mr. Jamieson, Dairy Field Agent of eastern Washington, is now reorganizing this Association, and it is planned to include a number of Tieton herds. Three hundred and thirty cows are now signed up and 5 Tieton herds are included. The prospects are that the remaining numbered required for the Association will be secured.

At the close of the week local creameries are paying 42 cents per pound for butter fat on the farms. The Cowichee Cheese Factory is paying 44 cents for butter fat in cream and 43 cents for butter fat in whole milk. Alfalfa hay continues to move at from $14 to $15 for the bulk.

Shoshone.

During the week ending December 2, 7 farm visits were made, 10 men called at the office, 3 other conferences were held, and one article was written for the local papers.

Alfalfa hay has been rapidly rising in price. The alfalfa mills are paying $12 per ton in the stack. This advancing price of hay has lowered the price of cattle because many want to sell cattle and few want to buy.

Cattle which were ranged this summer are going to market in rather poor condition. They came off the range in poor condition and it is not considered profitable to feed much hay at present prices to such cattle as most of the farmers have. The necessity of using the beef breeds for beef production is apparent under these conditions. It is probable that it would pay those who milk cows to breed for the maximum butter fat production and to veal the steers rather than to raise them to maturity.

Arrangement has about been made for a cooperative shipment of cattle by farmers who have only a few cattle to ship.

The local creamery paid 37 cents per pound for butter fat during the latter half of the month. The agents for the centralizer paid one cent higher.

WESTERN IRRIGATION AGRICULTURE.

FIELD NOTES.

Yuma.

During the week ending November 25, the maximum temperature was 78; minimum temperature, 29; greatest daily range, 47. Two days during the week were unpleasant for outside work because of a strong wind and sand storm. However, it seems that only little serious damage was done even to the open, unpicked cotton. Seventeen acres were irrigated.

Cotton picking and leveling of new land progressed satisfactorily. The following plats were plowed: C-22, D-11 and 12. Harvests of the following crops were made during the week: Alfalfa, C-21-24-39-40 and 41: Corn, B-19 and 20, C-21: Sudan grass, D-12: Ragi millet, D-13: Peanuts, A10-8: and Castor beans B-21.

After thorough preparation of soil, Peruvian alfalfa was seeded on borders C-1 to 5; also, barley was planted on E-5 and 6.

Alfalfa seed, sudan grass, and other miscellaneous threshing was completed. Sudan grass on field B-1 to 4 yielded seed at one cutting only at the rate of 237 pounds per acre. The portions of this field consisting of medium soil produced good yields, but the sandy soils made very little seed.

Peruvian alfalfa seed yielded as follows:

Border No.	Area	Type of soil	Crop	Treatment	Plat yield pounds	Yield per acre, pounds
C-41	.5	Heavy	2nd	None	152	304
D-20	.25	Medium	2nd	None	56.5	226
20	.25	Medium	2nd	Dragged	49.3	197
21	.5	Medium	3rd	None	63	126

The dragging of alfalfa seed consisted of dragging a long, heavy rope over the field by men on horses. It seems that in this test there was no advantage gained by this treatment. As is generally the case in this locality the late crop of alfalfa seed was light. This is due largely to the infestation of Chalsis fly which increases as the season advances. Medium soil such as borders D-20 and 21 is not recognized as the best type of alfalfa seed land.

Cotton picking on the Project is advancing well, but the ginning is being held up as the Yuma gin is not reconstructed as yet. The gin at Somerton is running night and day.

WESTERN IRRIGATION AGRICULTURE.
Field Notes.

Yuma (continued).

During the week ending December 2, the maximum temperature was 80; minimum temperature, 35; greatest daily range, 42. Nine acres were irrigated.

The following fields were irrigated, prepared for planting, and seeded as follows: D-11, Peruvian alfalfa; D-12 Indian alfalfa; D-13, flax (C.I.#3) in a rate of seeding test; D-14, flax in 30" rows, nine varieties; D-15, varieties of field peas, varieties of Tanger peas, varieties of vetch and one variety of horse bean; E-3, and 4, one-quarter acre plats of alfalfa - hairy leaved Peruvian-smooth leaved Peruvian-Chilean (common) and Indian.

The variety block of cottons on D-16 have all been picked, producing seed cotton yields as follows:

Rows 3'8" apart. Planted April 18. Thinned first May 25. Thinned last June 24.

Yield of seed cotton, pounds per acre.				
Variety	Thinned gradual 18" apart	Thinned abrupt 12 to 14" apart	Average	1915 Yield
*Sea Island	212	106	159	909
Egyptian	679	636	658	539
Kekchi	880	954	917	1126
Keenan	403	551	477	
Columbia	1560	1020	1290	1624
Foster	1103	1114	1109	1095
Lewis	1315	1464	1390	
Express	1093	1432	1263	
Snowflake	847	1167	1007	
Blackseed	1103	858	981	966
Durango	1378	1421	1400	
*Durango	1761	1761	1761	1362
*Acala	2700	2539	2620	1187
Tuxtla	1892	1620	1756	887
Triumph	1675	1351	1513	
Lone Star	1405	1027	1216	951
Holdon	2000	1567	1784	618
#624	1727	1783	1755	
Half and Half	2160	1783	1972	
Cleveland	2375	1783	2079	
Trice	1675	1511	1593	1031
Dixie	2431	2160	2296	
Ideal	1620	1781	1701	
*King	1836	1781	1809	

(*) Outside rows

Field Notes.

Yuma (continued).

The poorer soil at the end of the field producing the first 12 varieties is undoubtedly a partial cause for the lower production than that of the last 12 named varieties. Varieties as listed from Sea Island to Acala, inclusive, are long staple cottons while the remainder are short staple varieties.

During the week ending December 9, the maximum temperature was 75; minimum temperature, 20; greatest daily range, 40. The minimum temperature of 20 degrees occurred on two consecutive nights, December 8 and 9, and was the lowest temperature experienced since January 6, 1913, when a minimum of 16 degrees was recorded. Young plants of alfalfa, flax, etc., which are just coming up do not seem to be badly injured from this freeze. No land was irrigated this week.

Cowpeas and tepary beans were plowed under as green manure crops on borders B-11 to 17. Cotton picking was continued. Border C-22 was sub-divided, bordered and planted to alfalfa, winter grains, and flax for moisture requirement studies. Barley was seeded on E-8 and 9 to be utilized as grain in hog pasture test. A late crop of Indian alfalfa was harvested from C-27 and 28, and Peruvian alfalfa from C-7.

The thatched roof on the bunk house was torn off and replaced with a shingle roof.

The herd of hogs pasturing on Jerusalem artichokes have made gains to date as follows:

Dates		No. of	No. of	Weights		Gain, lbs.			Net
Initial	Final	hogs	days	Initial	Final	Total	Av. daily	per day per hog	return per acre
11/3	11/10	10	7	1022	916.5	-105.5	-15.1	-1.51	$16.78
11/10	11/21	10	11	916.5	929	12.5	1.14	.114	1.99
11/21	11/28	10	7	929	1010	81	11.57	1.157	12.88
11/28	12/4	10	7	1010	1089	79	11.28	1.128	12.57

The hogs were charged for full feed on the artichokes which they refused at first to eat. This probably explains the bif shrinkage of the first 7 days.

During the week Mr. Farrell spent 4 days at the farm and about the Project. Mr. George Scott and Mr. W. G. Wells were also station visitors.

Mr. Kosuke Handa, Director of the Agricultural Model Station of Suigen-Chosen, Korea, Japan, was at the farm on Saturday. He is interested in the study of Egyptian cotton.

WESTERN IRRIGATION AGRICULTURE.

Field Notes.

Belle Fourche.

During the week ending December 9, the maximum temperature was 60; minimum temperature, 2; precipitation, .02 inch.

The drainage ditch in field A was finished during the week. Some work was done on the dam, and the pond was filled. Men were employed repairing buildings, hauling feed and water for the stock, cleaning seed, and cleaning up about the farm.

San Antonio.

During the week ending December 9, the maximum temperature was 79; minimum temperature, 22; greatest daily range, 35. There has been no precipitation during the past two weeks.

Plowing was continued, the plowing of all fall plowed cotton plats in the rotation plats being completed. Plowing of D4 was finished and oats were seeded on this plat. Plowing of field C3 was finished. Alfalfa in the root rot control experiment in the nursery was seeded. Post holes were dug and posts set around the oats to be used in the steer pasturing experiment. Soil samples were taken on the corn plats in the rotation experiments.

The concrete culvert at the entrance to the farm was completed.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

FIELD NOTES.

Uncompahgre.

During the week ending December 9, 7 farm visits were made, and 7 requests for service and information were received.

On Tuesday a sale of dairy cattle was attended and 2 farmers were assisted in the selection of cows. The animals sold were Jerseys, the average price being $75. The animals were well bred and showed very good conformation.

One day was spent at Grand Junction in conference with members of the Colorado Agricultural College faculty, regarding the results of experiments in the feeding of beet molasses, and in attendance at the first live stock show. Four of the Project stockmen had stock on exhibition. There were 30 Holsteins, 25 Jerseys and 50 hogs shown.

The Colorado Experiment Station people have been feeding beet molasses to sheep, dairy cattle, and beef cattle for two seasons with very good returns. Prof. Morton reports that where fed with corn to sheep it gave very fair results. In feeding it to cows heavy with calf, bad results were experienced. In feeding it to dairy cows it was fed at the rate of 3 pounds per day. The price of the molasses has advanced to $26 per ton, which makes it very nearly prohibitive as a feed.

Butterfat is 50 cents at the Delta Cheese Factory and the supply of milk is increasing.

Boise.

Meetings have occupied the greater part of the week ending December 9. On Monday the monthly meeting of the directors of the Southwestern Idaho Grazing Association was held at Meridian with 6 of the 7 directors present. General plans for increasing the efficiency of the public range were discussed.

On Thursday about 35 users of the Boise National Forest range met in Boise and organized a cooperative cattle grazing association. The meeting was called in response to numerous expressions from range users in favor of the association. The interest in the plan was good. Mr. Rinehart attended the meeting and related the history and experience of a similar association on the Minidoka Forest Reserve.

A county-wide Farm Bureau organization was effected at Caldwell on Saturday as a result of a campaign conducted by County Agent McCall during the past two months. About 150 delegates representing various parts of the county were present. Six of the 7 county agents,

DEMONSTRATIONS ON RECLAMATION PROJECTS.
Field Notes.

Boise (continued).

the State Leader, and the Director of Extension were also present and assisted at the meeting. The preliminary work has been well done and the organization seems very auspicious.

Other meetings of the week have been general farmers' meetings held in rural centers. At all but one the lantern slides were used.

Tieton.

During the week ending December 9, 53 farms were visited; 40 of the 53 visits were in regard to a cow testing association. One-half day was spent in helping Mr. Holt to build a silo.

The most important development during the week was the completion of the organization of the local cooperative cow testing association. The association included herds in the Ahtanum, Naches and Wenas valleys adjacent to or near the Tieton Project, and 10 herds on the Project itself. A total of 641 cows were signed up for the association. Two of the pure bred herds will begin official testing at once, which will bring the income of the association to the equivalent of 686 cows. The Yakima Commercial Club has agreed to buy a horse and buggy and the tester's outfit - the title to the outfit to remain with the Commercial Club, but the Association to have unrestricted use of it so long as it is used for the purpose of the organization.

Assistance was given during the week to the construction of the last silo to be built this year. Mr. Holt purchased the material for his silo in the early fall, but was unable to secure help to put it up before frost came. He cut and shocked his corn immediately after the frost and is building the silo now that he has more time and can hire a man to help.

There is a marked increase in beef production locally and it is reported to extend throughout the Pacific Northwest. Dunn Bros., Yakima Valley short horn breeders, sold eight pure bred bulls and heifers at the Portland Stock Show for an average of $391.25 per head, a total of $3130 for the lot. A bull calf brought $800, and 2 heifers sold for over $400 each. In addition, Dunn Bros. contracted for animals for future deliveries.

Huntley.

During the week ending December 9, 5 farm visits were made.

DEMONSTRATION ON RECLAMATION PROJECTS.
Field Notes.

Huntley (continued).

A trip was made to Bozeman and a conference had with State College officials in regard to farmers' meetings to be held on the Project during the winter. Definite arrangements were not completed but some institute work in cooperation with the State College is contemplated for the month of February.

North Platte.

During the week ending December 2, 4 days were spent in hog cholera work. Three new out-breaks were reported and one case of reinfection in a herd of over 300 hogs that were treated with serum alone on September 25. Both serum and virus were used on all hogs showing a normal temperature in the latter herd when vaccinated last week. In the other 3 herds vaccinated, serum alone was used. In all about 385 hogs were vaccinated. Where the double treatment is given much more time is required than to give the serum alone treatment.

It has just been learned that the State Serum Plant's serum supply will probably be exhausted in a very short time. However, they have agreed to reserve enough serum to supply the needs of the Valley.

An 80-acre unit in the Dutch Flats District has just been sold for $12,000, or $150 per acre, with practically no improvements on the farm. This is a wnew record for the Project.

A bunch of 35 two-year-old Holstein heifers that were shipped in from Wisconsin last fall by a dealer were recently visited. As a whole, they are very inferior. There is need for good dairy cattle to supply the local demand

Minidoka.

During the week ending December 2, 22 head of strays of the Minidoka Project Cattle Grazing Association were returned to the farms. These were in better condition than those that had been brought in earlier. There are as yet approximately 30 head of strays in the Raft River country.

The range lambs are being topped and shipped from the fall pastures. As a rule they are in high condition, about 40% being in good enough shape to top the markets. For these, $9.50 per cwt. is being paid at the loading stations. As far as the quality and condition can be judged, there is but little difference between the black

Minidoka (continued).

face and the long wool grades.

Hogs are still $8.00 per cwt. Hay is from $12 to $13 in the stack on different parts of the Project. Butter fat is 43 cents at Rupert and 42 cents at Burley (with the customary reduction of 1 cent for each pound of cream). The Farmers Cooperative Association, in cutting down competition, is to be given the credit for the extra cent received at Rupert.

The pure bred Shorthorn and Hereford bull calves, arranged for in October, arrived during the week ending November 25. The selecting and purchasing were done by a man who is both a pure bred breeder and an experienced range cattleman. As this man raises Herefords, the Hereford calves were better, on an average, than the Shorthorns, however, several good Shorthorns were received. Sixty young bulls were brought in, of which 7 will be used exclusively on the farms of the Project, a part on the farms and in the cooperative and private range herds and the rest in the Raft River and Minidoka Forest Districts. While the bulls were not as good as desired, considering the prices that the stockmen had been willing to pay ($100 to $175) they were better than had been expected, and, by topping, some good individuals were secured.

The Paul Cooperative Cheese Factory is now receiving approximately 4,000 pounds of milk every other day, cheese being made on alternate days only. There has been a change in cheese makers as the first became discouraged and quit. An effort by the officers and the establishment of milk routes is increasing the amount daily. The Minidoka Project farmers, as a rule, are persistent and are to be highly commended in their refusal to acknowledge failure. Encouragement and advice are about all they need in their cooperative organizations as they are willing to do the work and bear the responsibility themselves.

ECONOMY IN USE OF TELEGRAPH.

Under date of December 1, the following memorandum was received from the Chief of the Bureau of Plant Industry.

"Attention is called to the importance of brevity in official telegrams. This applies to address and signature, as well as to body of the message. Examination in the Secretary's office of messages recently sent out from the Department has disclosed instances in which careful framing of messages would have reduced the toll from 10 to 40 per cent without affecting accuracy of address of impairing clearness of expression.

"Fiscal regulations 43 and 44, which relate to this subject, should be strictly adhered to and special care taken to avoid use of unnecessary words in telegrams."

USE OF AUTOMOBILES.

Under date of December 16, the following memorandum was received from the Chief of the Bureau of Plant Industry.

"Under date of December 5, 1916, the Secretary has written me as follows:

"Attention has been called to the case of an employee in charge of a field station who requested authority from his Bureau to use an automobile on official business and to secure reimbursement therefor on a mileage basis, which authority was refused. Subsequently an account was received from another employee at the station which included an item for the hiring of an automobile from the wife of the employee in charge. It thus appears that the employee in charge of the station attempted to do indirectly what he was not authorized to do directly.

It is appreciated that in isolated locations where other means of transportation are not available it may, in rare instances, be distinctly advantageous to the service and necessary to permit an employee to hire a privately owned vehicle for official use from another employee of the Department or a member of the latter's immediate family domiciled with or dependent upon him; but as a general rule such practice should be discouraged in all bureaus and offices of the Department, and reimbursement accounts involving such items should invariably be accompanied by detail statements clearly establishing the necessity from the Department's viewpoint.

"I shall be obliged if you will bring this to the attention of your employees with a view to carrying out the instructions of the Secretary."

FIELD NOTES

Yuma.

During the week ending December 16, the maximum temperature was 70; minimum temperature 25; greatest daily range 41. Nine acres were irrigated.

The work of leveling C series was continued. Corrals were repaired and heavy soil hauled in. Clearing was continued on D series. Cotton picking on the D series was completed. Sorghum stalks were cut on C-6-25-26 and A-14-7. Also corn stalks on B-20.

Alfalfa plots E-7 & 8 and sorghum on C-6-36-37 and 38 were harvested. B-9 to 17 was prepared and seeded to Peruvian alfalfa.

Sorghum stalks for frost protection were placed around the citrus trees. The orange trees show the effects of heavy frost, while the lemon trees are scarcely injured.

Mr. J. G. Martin visited the station on the 16th.

San Antonio.

During the week ending December 16, the maximum temperature was 74; minimum temperature 20; greatest daily range 54. Two very cool mornings were experienced, the minimum temperatures being 20 and 21 degrees. The cold weather of the previous week, when the minimum temperature recorded was 20 degrees, did serious injury to some of the winter crops on the station. Field peas on the rotation plats were badly damaged and many plants probably will not recover. Flax was also damaged considerably by freezing. Even the winter oats in the steer pasturing experiment which were nearly large enough to begin pasturing were killed back two to three inches from the growing tip. The cold weather of this week was not favorable for the recovery of the plants injured by the first severe freeze.

Plowing of sorghum plats in the rotation experiments was completed. Nearly all plowing to be done at this season is completed, the work being accomplished somewhat earlier this year than usual. Hauling of sorghum and Sudan grass hay was completed. The following rotations were manured: A5-14, A5-18, A6-2, B5-2, and B5-4.

Mr. F. D. Farrell spent Monday and Tuesday at the station and in the vicinity of San Antonio.

Huntley.

Results of Beet-Siloing Test

To determine the loss in weight and affect on sugar content of beets when siloed at harvest time a siloing test was conducted with two lots of beets, one of about 10 tons and one of about 12 tons.

The siloing was done in the ordinary manner by placing the beets in piles about 12 feet wide at the base and about 6 feet high, and covering with soil all of the pile excepting the ridge which was covered with beet tops.

Data on the test are given in the following table:

Silo No.	Number of days in silo	Weight, pounds		Loss in weight Percent	When placed in silo		When taken out of silo	
		Initial	Final		No. Samples	Sugar	Samples	Sugar
1.....	45	24,040	23,188	3.5	22	17.2	24	17.1
2.....	22	21,330	20,191	5.3	56	17.4	21	17.6

The beets from both silos were taken out December 1 and in both cases were in rather bad condition due to frost injury after being placed in the silo. The light covering of soil did not give sufficient protection.

The loss in weight was somewhat higher than in a similar test in 1915, the average loss from two piles in that year being 2.5%. The amount of sugar remained practically the same.

On the basis of the 1916 prices for beets, $6.50 per ton would be paid for beets testing 17% and under 17.5% so that in silo #1 there would be a loss in value of 23¢ per ton and in Silo #2 a loss of 34¢ per ton, due to the loss in weight while the beets were in the silo or an average of 28.5¢ per ton. Siloed beets were paid for in 1916 at the additional rate of $1.00 per ton so that in this case 71.5¢ per ton would be received for the work of siloing.

DEMONSTRATIONS ON RECLAMATION PROJECTS

FIELD NOTES.

Shoshone.

During the week ending December 9, 11 farm visits were made, 9 office calls were received and 8 other conferences were held.

Seven farmers cooperated in shipping a carload of cattle to Omaha. The load consisted of a mixed lot of bulls, steers and cows. Each man's cattle were given a distinctive mark so that they can be sold separately.

A meeting of sugar beet growers was held to discuss the proposition of getting a beet sugar factory for the Shoshone project. About 50 men attended. Beets now grown on the project are shipped to a factory at Lovell, which is not on the project. Since there is a competing company looking for a site it is thought that this is a good time to strike for a factory for the project. The beet crop was fairly satisfactory this year and prospects are good for a large acreage in 1917. A number of experienced beet growers from the North Platte project have rented farms for growing beets next year.

Truckee-Carson.

During the week ending December 9, there were received thirty calls for assistance and eight farms were visited.

Some time is being devoted to collecting data pertaining to the growing of turkeys. Information is being sought from various sources about the cost of growing young turkeys, the rates of gain in weight and cost of gains in fattening turkeys for market. There seems to be a dirth of information along this line. One feeding test has been started here during the week. Seventy three turkeys are included in the experiment and the initial weight averaged thirteen pounds. The object of the experiment is to determine the rate of gain and the number of pounds of grain required to produce a pound of gain. These turkeys will be on feed about two weeks.

On Monday of this week a cooperative shipment of one carload of hogs was sent out. The carload consisted of four consignments amounting to 98 hogs. So far, all cooperative shipments have been superintended by this office. This will probably be the case for some time yet as most of the consignment so far have been made by people who have not participated in previous shipments.

DEMONSTRATIONS ON RECLAMATION PROJECTS
Field Notes

Huntley.

Unfavorable weather prevailed throughout the week ending December 16. Five farm visits were made.

A trip was made to Billings to consult with the deputy State veterinarian in regard to what appears to be a case of contagious abortion in a project farmer's dairy herd. Dr. Smith will take blood samples next week to determine if the abortion germ is present.

Boise.

Semi-annual Report of the
Boise Valley Cow Testing Association.

The report of H. H. Beier at the first semi-annual meeting of the Boise Valley Cow Testing Association, covering the first six month's work of the association contained some very interesting as well as useful material. The report in part and in a very condensed form follows:

Thirty four herds have been under test, representing 632 cows classified by breeds as follows (not all of these have been tested).

Breed.	Registered	Grade	Total
Holstein-Friesian	63	205	268
Jersey	16	235	251
Shorthorn	0	40	40
Red Polled	18	13	31
Brown Swiss	0	2	2
Total	100	532	632

Bulls in the association include 19 Holstein-Friesian, 14 Jerseys, 4 Guernseys, 3 Red Polled, all of which are Registered animals except one Jersey.

A total of 575 cows have actually been tested, making an average monthly production of 726 pounds of milk and 26.8 pounds of butterfat per cow. The highest 10 cows averaged 1395 pounds of milk and 52.6 pounds of fat per month at a feed cost of 38¢ per cwt. of milk, 11¢ per pound of fat and a profit above cost of feed of $10.87 per month; the lowest 10 cows averaged 363 pounds of milk and 13.4 pounds of fat, at a feed cost of 64¢ cwt. milk; 15.2¢ per pound fat; profit above cost of feed of $2.72 per month.

Boise (continued)

The highest individual, a three year-old Holstein Friesian belonging to J. S. Hulbert, of Nampa, produced 13,172 pounds of milk and 426.1 pounds of fat, an average of 2195.3 pounds of milk and 71 pounds of fat per month.

There were 20 cows, or 3½%, which produced an average of 40 pounds or more butterfat per month for the six months; and 109, or 19%, of the cows tested made an average of 30 pounds or more; while 37 produced less than 20 pounds per month. Of the pure-bred cows 6.7% were in the 40 pound class while only 2.7% of grade cows appeared in that class

Thirteen herds, containing about 195 cows have averaged 30 pounds or more butterfat per cow per month. A herd of 13 grade Jerseys belonging to S. Lee and Son of Meridian holds the highest record of 37.7 pounds. In this herd 7 mature cows have averaged 38.55 pounds fat per month, and 6 two-year-olds, 37. pounds. The heifers show an average increase of 0.52% in test over their dams, a difference due, it is assumed, to the fine sire at the head of Mr. Lee's herd. Pasture and hay have been the only feeds used with this herd since the test work started.

As a result of the six month's work, 10 cows have been sold for beef, having failed to qualify as profitable producers of milk and butterfat, and there are still a number of others in the same class which should be accorded the same treatment.

Ten cows having an estimated value of $1,250, some of them among the most valuable animals in the association, have died from bloat during the six months.

The attitude of members present at the semi-annual meeting toward the work of the association was that the work had been beneficial and should be made permanent.

The efficient work of Mr. Beier as tester was recognized by a unanimous vote of commendation.

MISCELLANEOUS

Field Notes.

Western Irrigation Agriculture.

BELLE FOURCHE.

HUNTLEY.

Field Notes.

Western Irrigation Agriculture.

HUNTLEY (continued).

SAN ANTONIO.

Field Notes.

Western Irrigation Agriculture.

SAN ANTONIO (continued).

SCOTTSBLUFF.

Field Notes

Western Irrigation Agriculture.

SCOTTSBLUFF, (continued).

TRUCKEE-CARSON.

Field Notes.

Western Irrigation Agriculture

TRUCKEE-CARSON, (continued).

UMATILLA.

YUMA.

Field Notes.

Western Irrigation Agriculture.

YUMA (continued).

Field Notes.

DEMONSTRATIONS ON RECLAMATION PROJECTS.

BOISE.

HUNTLEY.

Field Notes.

Demonstrations on Reclamation Projects.

HUNTLEY (continued).

MINIDOKA.

Field Notes.

Demonstrations on Reclamation Projects.

MINIDOKA (continued).

NORTH PLATTE.

Field Notes.

Demonstrations on Reclamation Projects.

SHOSHONE.

TIETON.

Field Notes.

Demonstrations on Reclamation Projects.

TIETON (continued).

TRUCKEE-CARSON.

Field Notes

Demonstrations on Reclamation Projects.

TRUCKEE-CARSON (continued).

UMATILLA.

UNCOMPAHGRE.

Field Notes

Demonstrations on Reclamation Projects.

UNCOMPAHGRE (continued).